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MEDICAL & SURGICAL REPORTS.

OCTOBER, MDCCCLXX.

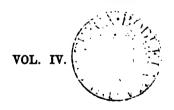
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ASSISTANT SURGEON TO THE ROYAL INFIRMARY.



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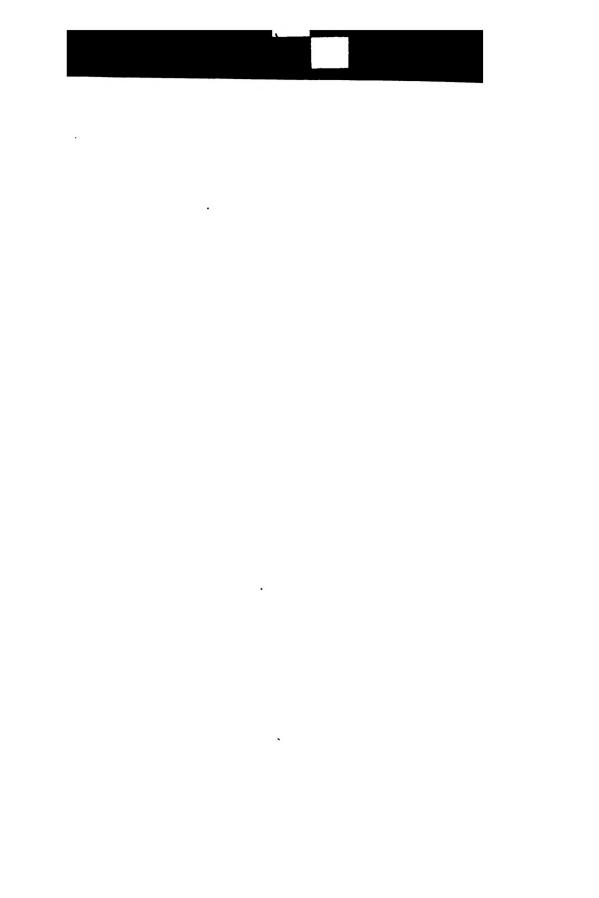
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LIVERPOOL

MEDICAL AND SURGICAL REPORTS.

OBSERVATIONS ON THE TREATMENT OF PNEUMONIA, WITH AN ANALYSIS OF CASES TREATED BY THE AUTHOR.

BY A. T. H. WATERS, M.D., F.R.C.P.,

PHYSICIAN TO THE LIVERPOOL MORTHERN HOSPITAL.

In the table which is appended to this paper will be found a short abstract of fifty-nine consecutive cases of acute pneumonia, treated by me in the Liverpool Northern Hospital.

The table presents the leading features of each case, viz., the age, the sex, the occupation, and the previous health, as far as could be ascertained, of each patient; the date of the commencement of the attack, generally marked by the occurrence of rigors; the date of admission into hospital; the frequency of the pulse and of the respiration; the treatment; the date of convalescence, i. e., the period when all active symptoms had subsided, when the pulse had fallen to a natural, or nearly natural standard, 60 to 80, and when the patient was able to take solid food; the number of days during which the patient had been under treatment when convalescence was established, and the number which had elapsed from the commencement of the attack; the date of discharge, and the number of days the patient was in the hospital; and lastly the result, with observations on the complications or peculiarities of the case.

Of the age of the patients. Under 10 years of age there was one case; between 10 and 20 years, there were seven cases; between 20 and 30 years, there were twenty-seven cases; between 30 and

40 years, there were fourteen cases; between 40 and 50 years, there were nine cases; and between 50 and 60 years, there was one case. All the patients were males, with the exception of two; many of them were strong, robust-looking men, whose previous health had been good, and in whom the disease had existed for a few days only before admission, the attack being distinctly traceable to exposure to wet or cold, or to both.

The list includes a large proportion of sailors, but also men engaged in town work, porters, hawkers, etc.—one patient was a merchant.

The pneumonia was single in fifty cases; it was double in nine cases.

Of the single cases, the right lung was the seat of the disease in twenty-two, the left in twenty-eight.

Of the double cases, the left lung was most involved in six cases, the right in one case. Both lungs were equally involved, viz. to the extent of one-half, in two cases.

With reference to the treatment adopted. In no instance was venesection practised. Only three patients were cupped, viz. No. 2, to 12 oz.; No. 9, to 8 oz.; and No. 11, to 8 oz. In only two cases were leeches applied, viz. in No. 3, twenty, and in No. 8, twelve. In Nos. 1 and 13, leeches had been applied before admission.

Whenever antimony was used, it was in small doses, varying from $\frac{1}{18}$ to $\frac{1}{4}$ of a grain, except in Nos. 5 and 2, in which it was given in doses of $\frac{8}{4}$ of a grain, and a grain respectively. In a large majority of the cases, viz. thirty-nine, no antimony was given.

In a large proportion of the cases some alcoholic stimulant was given early in the disease. In thirty-three cases alcoholic stimulants formed the main therapeutic agent; and in some of the most severe of these cases, no other medicine was given. In six of the other cases stimulants were given after a few days' treatment by other means, antimony, etc.

The stimulants were given at regular intervals, every hour, or every two, three, or four hours, frequently with food—beef-tea or milk. In the most severe cases, those marked by a rapid pulse

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and great dyspnœa, brandy was given every hour, or every hour and a half.

Mercury—calomel with opium—was not given in any case. In No. 10, I gave blue pill twice a day for six days; but no soreness of the gums was produced. In no other instance was mercury given, except as a purgative, in combination with some other drug, at the commencement, or during the course of the treatment.

In every case nutrients were allowed freely, viz. beef-tea and milk from the commencement of treatment, and solid food as soon as the appetite enabled it to be taken.

Of the other substances used but little need be said. Carbonate of ammonia and chloric ether—spirits of chloroform of the Pharmacopæia—were given in most of the cases treated by the early administration of alcohol, and in some cases ipecacuan wine was used.

As to the results. Of the fifty-nine cases, two died—Nos. 7, and 55. The first patient seemed to have rallied under the influence of stimulants, his pulse had fallen to 80 and his respirations to 20. The acute symptoms of the pneumonia had subsided, and convalescence appeared to be established. Effusion into the pleura, however, took place somewhat suddenly, to a large extent, and death soon followed. The second patient died after being in the hospital forty-eight hours. He was admitted in almost a sinking state, and the post mortem examination revealed the existence of hepatization of the whole of the right lung.

The following statement shows the duration of the disease, from the commencement of treatment to the time of convalescence, in the fifty-seven cases that recovered:

In two cases convalescence was established at the end of the 3rd day of treatment; in six cases at the end of the 4th day; in eleven, at the end of the 5th day; in seven, at the end of the 6th day; in five, at the end of the 7th day; in nine, at the end of the 8th day; in four, at the end of the 9th day; in two, at the end of the 10th day; in three, at the end of the 11th day; in two, at the end of the 13th day; in one case at the end of the 14th day; in three cases, at the end of the 16th day; and in two, at the end of the 24th day.

The average duration of these cases, from the commencement of treatment to the period of convalescence, was 8_1 days.

But it is important to ascertain how soon convalescence was established from the commencement of the attack, as well as from the commencement of treatment. Most of the patients had been ill for a few days before they were admitted into the hospital.

In forty-three cases I was able to ascertain the date of the commencement of the attack. Of these, four cases were convalescent at the end of the 6th day of the attack; three, at the end of the 7th day; four, at the end of the 8th day; five, at the end of the 9th day; three, at the end of the 10th day; nine, at the end of the 11th day; two, at the end of the 12th day; four, at the end of 13th day; two, at the end of the 14th day; one case at the end of the 15th day; two cases at the end of the 16th day; one case at the end of the 25th day; and one, at the end of the 26th day. This gives an average of 11½ days for the 43 cases. In the remaining fourteen cases the date of attack could not be ascertained.

In taking the average of the number of days during which the patients were in the hospital, it must be borne in mind that, for the most part, they were kept in, not only till they had fully recovered from their attack, but until they had gained sufficient strength to be able to resume work. Again, a few of the patients remained in the hospital several weeks, in consequence of their health being impaired from other causes besides the pneumonia. Thus No. 56, who was 72 days in the house, suffered from dysentery. No. 51, who was in 87 days, suffered from rheumatism. No. 41, who was in 53 days, had a severe attack of rheumatic fever. No. 34, who was 69 days in the house, was kept in in consequence of tubercular symptoms. No. 30, who was in 52 days, suffered from gangrene of the lung, and consequently had a protracted convalescence. No. 24 was 49 days in the hospital. Although he soon recovered from the pneumonia, he regained his strength very slowly. No. 17 was in the house 48 days. This patient had attempted to drown herself; her health was seriously impaired, and she convalesced slowly. In

No. 14 there was debility, with emphysema of both lungs; this patient remained in the house 44 days. Excluding these seven cases of very protracted residence in the hospital from the causes mentioned, we have, as the average of the remaining forty-nine* cases 21; days, and including the seven cases, we have a general average of 25; days.

These are all the cases of acute idiopathic pneumonia—pneumonia unconnected with advanced organic disease—which have occurred in my practice in the Liverpool Northern Hospital. They were all marked by the characteristic physical signs as well as the general symptoms of pneumonia, and the progress of each case was carefully noted from day to day.

The results of these cases, especially when taken in conjunction with others, of which statistics have been given, tend to prove that pneumonia is far from being a fatal malady, and that under a treatment which consists in supporting the patient and in abstaining from depletory, or depressing measures, its mortality is low.

I have purposely abstained from including in the table any but hospital cases, as these alone are available for public reference. It may perhaps be thought by some that the kind of treatment adopted in these cases is not as suitable for patients met with in private practice, as for those who seek admission into a public institution; that the latter, from a variety of eauses, come to us with a constitution more or less impaired, and thus that they necessarily require a tonic and stimulating treatment, and will not bear the so-called antiphlogistic remedies; whilst the former, whose previous health has been less impaired, require a somewhat opposite treatment. My own experience does not accord with this view. In the cases of pneumonia which I have treated in private practice, I have pursued a treatment similar to that adopted in the cases referred to in the table. In fact, the attacks of pneumonia met with amongst the better classes of society, brought on,

[•] One case is omitted, No. 57. This man was suffering from wasting palsy, and remained in the hospital several months. He recovered well from the pneumonia, and was treated with galvanism and strychnine for the palsy. He gradually recovered, and was discharged from the hospital in July.

as they often are, by circumstances which have been for some time undermining the general health, require a stimulating and restorative treatment quite as much as those of our hospital patients.

Having now briefly analyzed the cases referred to in the table, I will conclude with a few remarks as to the general principles of the treatment pursued.

The treatment which I adopt is not characterized by the exhibition of large doses of any of the so-called antiphlogistic remedies; I never withhold nourishment from the patients when they can take it, and I do not resort to powerful purgatives. On the other hand, I frequently prescribe stimulants at an early period of the disease, and they often form the main therapeutic agent on which I rely.

In the series of cases tabulated, as well as in those treated in private practice, I have never resorted to venesection, and only occasionally (in five of the recorded cases) to cupping or leeching. I believe there are few cases which are benefited by general bleeding, and that the abstraction of blood by the cupping-glasses or leeches is not often necessary. No doubt local bleeding sometimes gives great relief to pain; but I think we can generally afford equal relief by the use of other measures.

The so-called natural history of pneumonia has been better studied of late years than it was formerly; and the tendency of the disease, when uncomplicated, to terminate favourably has been brought out into strong relief. But, although it is highly probable that a large number of cases of pneumonia would end in recovery if the patients were merely confined to bed and properly dieted, yet there cannot be the slightest doubt that, even in such cases, the duration of the disease may be shortened, and the convalescence from it hastened, by the judicious use of therapeutic measures. Cases are frequently met with, in which, from neglect, the lung has remained consolidated for a considerable time—a condition which is generally soon relieved by appropriate treatment.

I do not believe that we possess any remedy which is

specially or specifically curative of pneumonia. A substance which has been much vaunted and very largely used in the disease is antimony. I occasionally prescribe it, although of late I have done so very rarely. In some instances it has appeared to me to be valuable. Some cases are tabulated, in which I fairly tried the effects of stimulants on the one hand and of small doses of antimony on the other, and in which the former (stimulants) proved decidedly injurious, whilst the latter (antimony) gave marked relief to the symptoms. I believe, however, that the cases are few in which antimony will be found useful, and that a prolonged administration of it, in any case, is not only unnecessary but injurious—whenever the drug produces a depressing effect, whenever it gives rise to sickness or purging I believe it does harm, and ought not to be persevered with.

The propriety or impropriety of administering alcohol in pneumonia is one of the most important questions in connexion with the treatment of the disease. Here, however, no fixed nor definite rule can be laid down. Whether stimulants shall be given in large or small quantities, or be withholden altogether, must be decided from the general features of each case, and not simply from the fact that pneumonia exists. There can be no doubt that many cases of pneumonia may be conducted to a satisfactory issue without the administration of a single drop of alcoholic stimulants; further, that there are cases in which alcohol aggravates the symptoms, increases the distress, and retards convalescence. At the same time there exist other cases which are as decidedly benefited by stimulants, and in which they should, I think, form the main therapeutic agent to be relied on. To distinguish between these cases is, no doubt, sometimes a difficult problem. Whenever the pulse is very quick, the dyspnœs urgent, and the disease extensive, I never hesitate to prescribe stimulants freely. In a large proportion of the cases which have come under my care. both in hospital and private practice, I have given, apparently with decided advantage, a larger or smaller quantity of some form of alcohol, either wine or brandy, in the earlier stages of the disease.

The administration of calomel and opium, which used to form so important a feature in the treatment of pneumonia, has, of late

years, fallen into disuse. There can, I think, be no doubt that too high a value was placed on mercury as a remedy in the stage of hepatization, for which it was considered peculiarly applicable; and that it possesses no special properties for promoting absorption of the effused matters. As a purgative, mercury may be useful, but if given in frequent doses, or with the view of producing salivation, I believe that its effects will generally be found more or less prejudicial. I have seen it given, and I have had opportunities of watching its effects; but in my own practice I have not given it more than two or three times. In the series of cases referred to in the table, calomel was not given in any instance; but in one case blue pill was administered twice a day for six days; and my belief is that recovery was in no wise hastened by its use.

The exhibition of opium is, I think, very desirable in many cases. It often relieves pain, allays the distressing cough which sometimes exists, and procures sleep. I have found that the pain in the side which so frequently accompanies pneumonia may be generally relieved by the administration of a dose of opium.

There are some other remedies which are frequently given in inflammatory affections of the lungs. Amongst these is ipecacuan, which may, I think, be advantageously administered in some cases of pneumonia. It sometimes nauseates, and prevents the patient from taking nourishment, and in this respect may do harm. In such cases it ought to be omitted. It is not a remedy to be trusted to in any severe case of the disease; but it may be occasionally of some service. I frequently give it, together with stimulants, in the pneumonia of children. Carbonate of ammonia and chloric ether are substances which I also frequently prescribe in the disease; and they appear to me to have a good effect. I give them either alone or in conjunction with alcoholic stimulants.

With regard to salines, such as citrate of potash or acetate of ammonia, I do not, as a rule, prescribe them, either in this, or in any other inflammatory affection. I think it doubtful whether the practice of constantly administering these substances in inflammations is desirable. There can, however, be no doubt that they are sometimes agreeable to the patient, and afford relief to the

distressing thirst which is occasionally present. Further, by supplying water and certain other constituents to the blood, they may promote the action of the skin, as well as of other secreting organs, and thus have a curative effect. At the same time I would remark, in referring to the action of the skin, that it by no means follows that the existence of a hot, burning, dry skin necessarily indicates the use of salines, or of any of the so-called diaphoretic medicines, as antimony, &c. This condition is sometimes rapidly relieved by the sole administration of some form of alcohol; and in fact, wine or brandy will occasionally be found the best diaphoretic we can use.

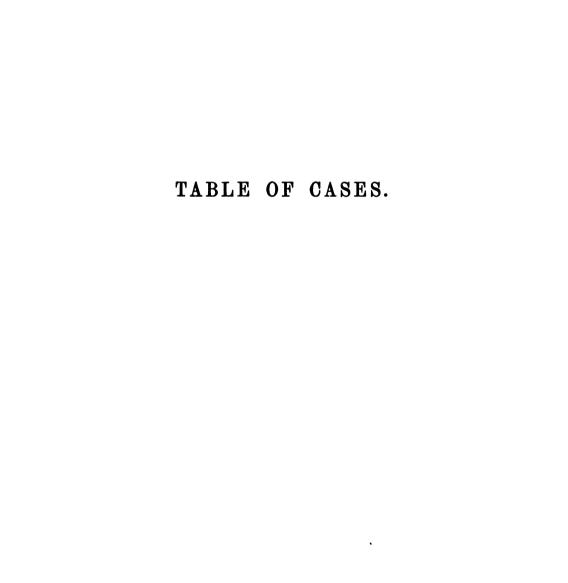
I often give bark with ammonia and spirits of chloroform in the early stages of pneumonia, and quinine as soon as the acute symptoms have subsided.

The administration of nourishment forms an important element in the treatment of this, as of all other acute affections. early stages of a severe attack there is little desire for food: and there is a risk, if the mere feelings of the patient are alone consulted, that nourishment may be withholden too long. It is not desirable to starve a patient, even during the acute stages of the disease; but small quantities of such nourishment as can be taken, excluding solid food, may be safely allowed. There is great waste going on during the attack, and unless this is supplied to a certain extent by food, there will follow great prostration, which will seriously endanger the patient's safety when the acute symptoms have subsided. For the most part, in the early stages, the quantity of food given may be safely left to the desire of the patient. As the case progresses and the appetite begins to improve, the diet should be more liberal; and as soon as convalescence is established solid food will be borne. cases as require a very early and free administration of alcohol, nutrients—as beef-tea and milk—should be given liberally from the first.

In reference to the practice of counter-irritation. I believe that at the commencement of an attack, and in its early stages, mustard poultices—or some other mild counter-irritant—followed by the application of large hot linseed-meal poultices, act bene-

ficially; and that later in the disease blisters are often useful. It is not desirable, however, to blister severely. The blisters should only be applied for a few hours, and should be followed by hot poultices. In weakly persons blistering should not, I think, be resorted to; and in children it is rarely, if ever, necessary.

In conclusion I would remark that, in forming an opinion of the most appropriate treatment in any given case of pneumonia, regard must be had to the constitutional condition of the patient, the frequency and character of the pulse, and the antecedent circumstances of the case, rather than to the amount of lung involved or the stage which the disease has reached. We should bear in mind that it is the patient, and not simply the diseased lung, which we have to treat. And in considering the value of any remedies which we give, the influence of rest and proper nursing should never be forgotten. In a large proportion of cases of acute disease, the rest and nursing, including the regulation of the atmosphere and temperature of the room, and the administration of nourishment, constitute a large part of our treatment; and we are too apt, in speaking of the effects of different remedies in a particular disease, to forget this important element of cure. The results of recent observations, as to the effects of various remedies used in disease, may shake our confidence in the specific virtues of some of these substances, but they should by no means alter our opinion of the value of treatment.



					To cases of	-					Date of	
g M	NAME.	Sex, Age, and Occupation	Previous Health	Commence- ment of Attack.	Date of Admission.	Amount of Lung involved.	Pulse.	Respira- tion.	TREATMENT. Date val	Date of Con-	Discharge. Number of days in Hosp:tal.	REMARKS.
-	片 	M., 47, Sailor.	Good. A stout, muscular man.		Ill about ten Mar. 14, 1860. days before admission.	Treft.	8	Dyspnos.	Dyspnos. Leeches before admission. † gr. anti. March 16, mony with saline every three hours, end of 4th day from March 14th to 21st. Blister on of resiment 16th.		March 22, Recovered. 8 days.	Recovered.
01	₩. E	M., 29, Sailor.	Good. A stort, muscular man.	Mar. 23, 1860, Mar. 29). Mar. 29	d Left. Base right.	110	40 Much dyspnæs.	One gr. antimony with saline every April 3, three hours, from March 29th to April end of 5th day 2nd, then three times a day until of treatment April 3rd. Cupping to 12 oz. on 29th and 11th of March.	April 3, end of 5th day of treatment and 11th of attack.	April 7. 9 days.	Recovered.
•	¥. ¥	M., 19, Sailor.	Good.	April 21 "	April 23 .,	a Right. Pleurisy.	106	40 Dyspnœa.	April 24th, 12 Leeches. ‡ gr. anti: May 17, end mony with saline every four hours. of 24th day from April 25th to 25th; 26th, 8 of treatment leeches, then saline alone; 4 oz. wine and 26th of from May 2nd to 6th, then 6 oz. attack. Bister on May 2nd, and again on May 17th. Iodine to chest and subsequently iod, pot. internally.	ay 17, end 24th day treatment ad 26th of attack.	May 26. 92 days.	Recovered. This case was complicated with pleurisy, which delayed convalescence.
4	G. H.	M., 82, Fireman.	Good.	June 1 ,,	June 4	1 Left.	8	Dyspnœs.	Saline every four hours for one day, then, June 9, and saline with \$\frac{1}{2}\$ gr. antimony every four of 5th day of hours till June 8th, every eight hours, treatment till June 9th, and \$\frac{4}{2}\$ oz. wine daily; \$\frac{1}{2}\$ and 8th of leeches on the 5th; blister on the 8th.	June 9, end of 5th day of treatment and 8th of attack.	June 26. 22 days.	Recovered.
16	J. W.	M., 26, Labourer.	Good	June 5 "	June 8 "	t Left.	8	8	attack.	f 3rd day of treatment and 6th of attack.	June 19.	Recovered.
•	11 11	M., 86, Porter.	Not good Intempe- rate.	Ten days before admission.	July 17	Flouritic	8	8	Saline with # gr. antimony every four July 21, end hours, from 17th to 28rd; 4 or. brandy, of 4th day of Mingers, and restment to 2 or., daily, and attach of Mingers.	fuly 21, end if 4th day of treatment and 14th of	Angust 9. 28 days.	Recovered.

	Recovered.	Recovered.	Recovered.	Angust 3. Recorered.	Recovered. Pneumonia of apex (tuberoular?)	Becovered. Complicated with delirium. A man of in- temperate habits.
	Feb. 26. 13 days.	May 9. 15 days.	May 18. 7 days.	Angust 3. 22 days.	Jan.2,1862. 15 days.	Jan. 21. 24 days.
	Feb. 21, end of 8th day of treatment and 25th of attack.	April 28, end of 4th day of treatment and 7th of attack.	2 grs. blue May 10, end of 4th day of treatment.	July 23, end of 11th day of treatment and 18th of attack.	of 11th day of treatment and 19th of attack.	Jan. 5, end of 8th day of treatment and 11th of attack.
proved under the stimulants. On 18th, his pulse was 80; respiration, 20. He became worse after this, and died on 26th.	Dyspaces, 12 leeches. Blister, Saline.	4 gr. antimony every three hours, from April 28, end April 25th to 27th; every four hours to of 4th day of 28th; every six hours to May 1st; then treatment omitted.	Blister. 6 oz. wine daily. 2 grs. blue pill twice a day.	Cupped to 8 oz. on 13th. ‡ gr. antimony July 23, end every three hours, from 18th to 14th; of 11th day of then every four hours to 16th; then treatment three times a day to 18th; then stopped. and 18th of Blister on 17th. Quinine on 27th.	Small doses antimony for three days. Dec. 28, end Jan.2,1862. Recovered. 6 os. wine. treatment and 19th of lar? strack.	Six leeches before admission. ‡ gr. anti. Jan. 5, end mony every two hours for one day; of 8th day of every four hours for two days; every treatment ax hours for one day; laudanum for and 11th of delirium; brandy and wine. One blister.
	Dyspnos.		24	4	\$	8
		116	8	81	8	116
	d Right. Pleuritic	Upper lobe. 116 Right.	h Left.	4 Left.	Right. Upper lobe.	# Left. Small part Right.
		=	•	=	2	2
	Feb. 13	Apr. 24	May 6	July 12	Dec. 17	Dec. 28
	Seventeen days before admission.	Apr. 21, 1861. Apr. 24 ,,		July 10 "	Eight days Dec. 17 before admission.	Dec. 25, 1861, Dec. 28
	Not good.	Good.	M., 24, Ailing for Labourer. some weeks	Good. A strong, muscular man.		Intempe- rate.
	M., 26, Sailor.	M., 17, Sailor.	M., 24, Labourer.	M., 28, Porter.	M., 24, Sailor.	M. 21, Hawker.
	6. J	н. н.	W. K.	H Ö	й Э	여 타
	Œ	٥	9	7	81	13

			14		
RESULT. Remares.	Recovered. A thin, spare woman. Case complicated by bronchitis and emphysems.	Recovered.	Recovered.	Recovered. Case of bronchopneumonia, following immersion. The patient had been put into the hot bath, when recovered from the water and before and and the hoppital; such had attembed suited suited.	Recovered.
Date of Discharge. Number of days in Hospital.	Well Jan. 23. Kept in till Feb. 13 on account of weakness 44 days.		Feb. 12. 14 days.	Nov. 20. 48 days.	Dec. 11.
Date of Convalence.	Jan. 11, end of 10th day of treatment and 17th of attack.	May 1, end of 5th day of treatment and 7th of attack.	Feb. 3, end of 5th day of treatment and 9th of attack.	Oct. 24, end of 16th day of treatment and of attack.	Nov. 28, end of 6th day of
TREATMENT.	gr. antimony every four hours, from Jan. 11, end Well Jan. Recovered. Jan. 2nd to 6th; improved. Antimony of 10th day of 22. Kept in A. thin, spare omitted for one day. Relapse. Re- treatment till Feb. 13 woman. Case peaked from 7th to 11th. Stimulants. and 17th of on account complicated by attack. 44 days. emphysema.	gr. antimony every three hours on May l, end 26th; every four hours on 27th; omitted of 5th day of treatment on 28th; blister on 28th.	Jan. 80th to Feb. Jat; three times and 5th day of day from 1st to 8rd; blister 81st Jan. treatment and 9th of attack.	Carb, ammonia and sulph, ether. 8 oz. Oct. 24, end wine daily, and 3 oz. brandy subse-of 16th day of quently. Bark. and of attack.	182 Great Admitted on 90th Nov. with hronchitis. Nov. 28, end Dec. 11.
Respira- tion.	8				Great
Peles	116	108	100	901	182
Amount of Lung involved.	g Right. g Left. Bronchitis.	1 Left.	# Left.	Right. Bronchitis.	Left.
Date of Admission.	week before Jan. 1, 1862.	lpr. 26 "	Jan. 29, 1868.	:	Nov. 22 "
Commence- ment of Attack.	A week before J admission.	Apr. 24, 1862. Apr. 26	Four days Jefore admission.	Not good. Oct. 8, 1868. Oct. 8	Nov. 22 N
PREVIOUS HEALTE.	Woat	Good. A strong, muscular man.	Good.	Not good.	
Sex, Age, and Occupation.	F. 26.	M., 26, Sailor.	K., 25, Sailor.	F., to.	M., 29,
4	29 #	C. ¥	9. C.	ні к і	7. T. A.
g .	7	*	91	H	*

			15		
	Recovered.	Recovered. Gained strength slowly. Of intemperate habits.	Recovered. Admitted with scute rheumatism on Jan. 8; pneumonia on Jan. 11.	Recovered. A somewhat spare Franch- man. Stimu- lasts aggra- valed the Antimony gave relief.	Recovered.
	April 1. 9 days.	Sept. 7. 30 days.	Feb. 10. 30 days.	Reb. 22. 80 days.	March 17. 21 days
	March 27, end of 4th day of treatment and 6th of attack.	Aug. 16, end of 8th day of treatment and 8th of attack.	Jan. 27, end of 16th day of treatment and 16th of attack.	Feb. 1, end of 9th day of treatment and lith of attack.	March 4, end of 8th day of treatment and 18th of attack.
stopped on 28th.	gr. antimony every four hours, from March 27, and March 28rd to 25th; subsequently of 4th day of ammonia, ipec. and wine. Blister on treatment 23rd. and 6th of astack.	March 9th, a grain of opium three times Aug. 16, end a day, 14 gr. antimony every four hours; of 8th day of 10th, opium stopped; ipeo, landanum treatment and antimony to 18th; then wine (6 oz.) and 8th of and carb. ammonia; 17th, quinine.	Alkalies (pot. bicarb). Opium at night, Jan. 27, end 19th, bark with potash; 27th, quinine. of 16th day of treatment treatment and 16th of and 16th of attack.	28rd, noon. Stimulants, brandy and Feb. 1, end ammonia; became worse at night, of 9th day of 1, gr. antimony with saline and ipoc. treatment every three bours to night of 24th; and 1th of then every four hours; decided improvement. Mixture stopped on 26th, and an oz. of port wine given on 27th, and an oz. of port wine given on 27th, antimony resumed every fron hours; 28th, every four hours; 38th, three times a day; improved; 31st, antimony omitted; 6 oz. wine.	Half an ounce of brandy every two hours. March 4, end March 17. Recovered, from Feb. 24th to March 4th; then 6 oz. of 8th day of 21 days carb, amonois and ipec. from Feb. 24th and 18th of to March 7th.
	9	88		4	76
	120	130	88	ଝା	180
	g Right.	± Left.	d Left. Acute rheuma- tism.	ł Left. ł Right.	♣ Left.
	1864.	:	1865.	5	:
	r. 21, 1864. Mar. 28, 1864.	Δug. 8	Jan. 11, 1865. Jan. 11, 1865.	Jan. 28	Feb. 24
	1864.	:	. 1866. J		:
	ar. 21,	Αυβ. 8	a. 11,	Jan. 21, ,,	Feb. 19
	Good. Ma	Intempe- A:	n'	Good. Ja	Good.
	M., 80, Labourer.	M., 36, Carter.	M., 32, Shipwright	M., 55, Fireman.	M., 18, Sailor.
	.8. .8.	ri ai	Ģ. Ā.	D. K.	J. D.
,			<u></u>	81	8

		16			
Recovered. Gained strength slowly.	Recovered.	Recovered.	Recovered.	Recovered. Very severe case of double pnen-monia. Improved rapidly under stimu-lants.	Recovered,
1866. 1866. 49 days.	Dec. 16, 1865. 28 days.	Jan. 30, 1866. 21 days.	Feb. 28. 34 days.	March 3. 30 days.	Feb. 20. 18 days.
Nov. 23, end of 8th day of treatment and 12th of attack.	Nov, 25, end at 7th day of treatment and 11th of attack.	fan. 14, end if 5th day of treatment and 9th of attack.	Feb. 3, end of 9th day of treatment.	Feb. 8, end of 7th day of treatment and 11th of attack.	Feb. 10, end of Sth day of treatment.
An ounce or port wine every sures nours, Nov. 25, end from Nov. 18th to 25th; then 6 oz. of 8th day of daily; ipec. and morphia to 25th, then treatment quinine; 20th, blister.	For one day 1's gr. antimony every three Nov. 25, end hours; omitted and stimulants given, viz., of 7th day of 19th, 6 oz., 20th, 10 oz.; 20th, 8 oz.; 21st, treatment 12 oz.; 25th, 10 oz.; Dec. 9th, 6 oz.; and 11th of ipec. and morphia from 19th; quinine attack. Dec. 2nd. Two blisters.	Carbonate of ammonia, ipoc. and spirits Jan. 14, end of chloroform, and 6 oz. port wine, daily, of 5th day of to Jan. 22nd, then quinine. One blister, treatment and 9th of attack.	Carbonate of ammonia, spirits of chloro. Feb. 3, end form, and squills. Two blisters. Feb. of 9th day of 3rd, quinine and wine.	A tablespoonful of brandy every two Feb. 8, end hours, from Feb. 1st to 6th, then 4 oz. of 7th day of daily; carb, ammonia and squills, from treatment Feb. 1st to 8th, then quinine. Blister and 11th of on 2nd Feb.	A tablespooutal of brandy every two Feb. 10, end hours, from Feb. 2nd to 15th; then of 8h day of 6 ox. wine daily; carb. ammonia and treatment, spir. chloroform to 10th; then gainine.
e-	84			Great dyspace.	
4	120	120	108	140	122
A Kagat.	Right.	Upper part	Right. Pleuro- preumonia effusion.	# Right. Left. Plearitic effusion.	I Left.
Nov. 17, 1865.	Nov.18	Jan. 9, 1866.	Jan. 25	Feb. 1	Feb. 2 ,,
Nov. 13, 1865, Nov. 17, 1865.	Nov. 14 ,,	Jan. 5, 1866. Jan. 9, 1866. Upper part 120	Ailing for Some time.	Three or four Feb. days before admission.	
Good,		Good.			
M., 20, Labourer.	M., 40, Sailor.	M., 27, Labourer.	M., 23, Labourer.	M., 28, Shoemaker	M., 30, Sailor.
ži H	C. A.	В. М.	E C	N. J.	A. M.
Labourer.		4	G. A. B. M.	CC KK CC	C. A. E. C. A. M. A. J. C. A. M. J. C. A. J. C.

		3	17		
and very lorad expectoration. Great prostra- tion of strength	Recovered. Had systolic murmur at base of heart.	Recovered.	Recovered.	H 02 -	
	March 12. 9 days.	April 1. 8 days.	June 9. 37 days.	August 2. 69 days.	after acute peased off, a hospital on weak state symptoms.
	March 9, end of 6th day of treatment and 11th of attack.	March 31, end of 7th day of treatment and 15th of attack.	May 8th, end of 5th day of treatment and 12th of attack.	June 4, end of 9th day of treatment and 10th of attack.	
	Orrbonate of ammonia, ipec. and spirits March 9, end March 12. Recovered. of chloroform, from March 8rd to 10th; of 6th day of 9 days. Had systhen quinine; 6 oz. port wine from treatment murmur March 4th to 12th.	Carbonate ammonia and spirits of chlo-March 81, end roform. One blister. treatment treatment and 15th of attack.	Tincture of iron, spirits of chloroform, May 8th, end and quinine; 6 oz. wine daily. One of 5th day of blister. said 12th of attack.	27th May, ammonia and spirits of chlo- June 4, end August 2. roform; 29th, ammonia, saline, and of 9th day of 69 days. ipec.; an oz. of wine every three hours; treatment 30th, an oz. of wine every two hours; and 10th of 31th, an oz. of brandy every three hours; attack.	
		<u> </u>		99	
	116	88	120	140	
	g Left. Base right. Pleurisy.	# Right.	k Right.	Whole of right lung. Upper part most affected.	
	2	=	:	:	
	Mar. 8,	Mar. 24	May 8	May 26	
	Feb. 26, 1866. Mar. 8,	Eight days Mar. 24 before admission.	A week before May 3 admission.	May 25, 1866. May 26	
		Good.			
	M., 81, Groom.	M., 24, Sailor.	M., 19, Carter.	M., 26, Ship Carpenter.	
	я. Н	T. F.	H. A.	н	
	a	z	88	2	
		_	_		

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o k	j	Sex, Age, and Occupation.	PREVIOUS HEALTH.	Commence- ment of Attack.	Date of Admission.	Amount of Lung involved.	Pulse.	Respira- tion.	TREATMENT.	Date of Convalence.	Date of Discharge. Number of days in	RESULT. REMARKS.	
28	K.O.H.	M., 31, Labourer.		Ailing for some time.	Alling for Aug. 6, 1866. 1 Left.	. I Left.	8		Carbonate of ammonia, ipec.; 8 oz. port Aug. 14, end August 14. Recovered. wine daily; subsequently quimine.	Ang. 14, end of 8th day of	Hospital. August 14. 8 days.	Recovered.	
8	ਲ ਜ਼	M., 14, Sailor.	Good		Oct. 2 "	Upper part. 120	130		Ipec. and squills, from Oct. 2nd to 6th; Oct. 18, end on improvement; pulse kept up; on of 16th day of 6th, ammonia and 4 oz. port wine daily; treatment, improvement; 18th, quinine; 20th, 6 oz. wine; 23rd, iron and cod-liver oil.	treatment. Oct. 18, end of 16th day of treatment.	Nov. 12. 40 days.	Recovered. Was kept in the hospital on account of phthicisical to symptoms, but went out quite well.	
37	8 .	M., 23, Sailor.	Intempe- rate.	Oct. 15, 1866. Oct. 18	Oct. 18 "	# Right.	120		Carbonate ammonia and spirits of chlo. Oct. 24, end roform with saline every four hours, and of 6th day of 8 oz. brandy daily, from 19th to 27th; treatment then 8 oz. brandy daily, to Nov. 1st; and 9th of 25th, quinine.	Oct. 24, end of 6th day of treatment and 9th of attack.	Nov. 9. 21 days.	Recovered. Intermittent pulse; became strong and regular under stimulants.	
8	ж ж	M., 43, Porter.	Good.	Jan. 28, 1867, Feb. 1, 1867. 2 Left.	Feb. 1, 1867	. \$ Left.	110	8	Feb. 1st, 4 oz. brandy, ammonia, and Feb. 8, end spirits of chloroform; 2nd, 4 oz. brandy of 7th day of every two hours; 3nd, 4 oz. brandy treatment every one and a helf hours; continued and 10th of to 9th; then 6 oz. daily; subsequently, attack.	Feb. 8, end of 7th day of trestment and 10th of attack.	Feb. 26. 25 days.	Complicated with delirium.	
8	. c.	M., 20, Militia Man.	Good	April 25 ,, April 30	April 30 "	# Left. Base right.	110	25	e gr. antimony with saline for two days; May 6, end worse. May 2nd, a tablespoonful of 6f 6th day of port wine every two hours; carbonate treatment ammonia and ipec.; improved.	May 6, end of 6th day of treatment and 11th of attack.	May 16. 16 days.	Recovered.	
8	W. T.	ķ, Ķ		Three or four May 18 days before admission.	May 18 "	# Right.	120		A teaspoonful of brandy every three May 17, end hours; ammonia and ipec. treatment and 8th of sud 8th of	May 17, end of 4th day of treatment and 8th of	May 21. 8 days.	Recovered.	

			19		
with rheumatic fever and en- docarditis. Ex- treme exhaus- tion.	Recovered.	Recovered. Case of neg- lected pneu- monia. Some dulness re- mained at time of discharge.	Recovered.	Recovered. Patient had strumous aspect. Severe diarrhose during attack.	Recovered. Admitted Sept. 18th. Severe hemorytais; ceased 27th. Preumonia on Oct. 1.
	Sept. 17. 20 days.	Oct. 12. 24 days.	Dec. 12. 18 days.	Sept. 25. 82 days.	28 days.
trestment.	Sept. 2, end of 5th day of treatment.	Oct. 1, end of lith day of treatment.	Dec. 7, end of 7th day of treatment and 9th of attack.	Aug. 23, 9th day of treatment and 13th of attack.	Oct. 14, end of 18th day of treatment and 14th of attack.
tinued to 26th; then 10 oz.; 28th, 8 oz.; 29th, wine, 10 oz., instead of brandy. During scute stage he took no medicine except optium. On 29th, quinine, and subsequently iron.	29th August, 4 oz. brandy; 30th, 8 oz. Sept. 2, end wine; 31st, 12 oz. wine, carb. ammonia of 5th day of and bark.	Sept. 19, ammonia and bark; 26th, 6 oz. Oct. 1, end of port wine; 28th, iodide of potassium, 11th day of wine continued.	Carbonate of ammonia and ipec., one gr. Dec. 7, end opium thrice a day; 4th, \$\dip \text{os}\$, brandy of 7th day of every three hours, opium at night only; treatment 7th, ammonia and ether.	Carbonate of ammonia and bark from 14th; 6 oz. brandy, on 14th; 12 oz. brandy on 15th; 8 oz. brandy on 17th; 6 oz. brandy on 24th; 5 oz. brandy on 28th; brandy onitted on 30th; opium to check diarrhose.	Carbonate of ammonia and tinct. cinch., Oct. 14, end Oct. 28rd. Recovered. from 2nd Oct.; 6 oz. port wine daily. of 13th day of 28 days. Admitted treatment and 14th of hemoryty cased 27 person attack.
			8	<u> </u>	
	8	114	130	121	128
	# Right. Small part left.	d Right.	Hight. Plenrisy. Effusion.	Nearly whole left. Slight effusion.	an Left.
	Aug. 28 "	Sept. 18 ,,	Dec. 1 "	Ang. 10, 1868. Ang. 14, 1868.	Oct. 1, ,,
rhoumstiem.		III some time. Sopt. 18	Nov. 29, 1867. Dec. 1	Aug. 10, 1868.	Oct. 1, .,
ptysis.			Good.	Good	Not good. Hamo- ptysis.
	M., 24, Sailor.	M., 28, Sailor.	M., 44, Fireman.	M., 18, Labourer.	M., 28, Merchant.
	A. T.	ž,	ei Ei	න් න්	# #
	\$	3	2	3	4

Recove Recove	Recover Recover The patition at a country of the patition at t	Recovered. Recovered. The patient been subject a cough, had experied loxy. Recovered. Recovered. Preumonia apex, con caled with volar interview.	Recovered. Recovered. The patient had been subject to been subject to rated blood. Recovered. Recovered. Pheumonia of spect. complicates, complicated with valuer disease of heart. Recovered. Had Rheumatism.
d Oct. 18. of 29 days. di March 18.	d Oct. 18. of 29 days. of 21 days. of 18 days.	d Oct. 18. of 29 days. of 21 days. of 13 days. f May 26th. of 28 days.	d Oct. 18. of 29 days. of 21 days. of April 16. of 18 days. of 28 days. of 37 days.
L. Sop. 22, end of 8th day of treatment. d Feb. 25, end of 5th day of	L Sop. 22, end of 8th day of treatment, treatment of 6th day of treatment and 7th of attack. A pril 9th, end of 6th day of treatment of the day of	L. Sop. 22, end treatment. d. Feb. 25, end d. of 6th day of treatment and 7th of attack. d. April 9th, end of 6th day of treatment and 11th of attack. and 11th of attack. May 10, end of 10th day of d treatment and 11th of attack.	L Sop. 22, end treatment. d Feb. 25, end of 6th day of treatment and attack. A April 9th, end of 6th day of treatment and 11th of attack. May 10, end treatment and 13th of attack. I May 10, end treatment and 13th of attack. June 13, hor 13th of attack.
Carbonate of ammonia, ipec., and tinct. Sop. 22, end Oct. 13. Recovered. cinch.; 8 oz. port wine daily. treatment. Carbonate of ammonia, with cinch. and Feb. 25, end March 13. Recovered. equils, from 20th to 23rd; then am- of 6th day of 21 days.	Carbonate of ammonia, ipec., and tinct. Sop. 23, end cinch.; 8 oz. port wine daily. Carbonate of ammonia, with cinch. and Feb. 26, end aquilis, from 20th to 23rd; then am- of 6th day of monia and sp. chlorof., and 6 oz. wine. Carbonate of ammonia, with cinch.: § April 9th, end oz. of brandy every three hours. On of 6th day of 7th, iod. pot., with cinch.; blister. treatment 10th, Quina, with 4 oz. port wine.	Carbonate of ammonia, ipec., and tinct, Sop. 22, end Oct. 13. Becovered. carbonate of ammonia, with cinch. and Feb. 25, end March 13. Recovered aquilia, from 20th to 23rd; then am. of 6th day of 21 days. Carbonate of ammonia, with cinch.; April 9th, end apply of 2.1 days. Carbonate of ammonia, with cinch.; April 9th, and a statech. Carbonate of ammonia, with cinch.; April 9th, and 7th of attach. Carbonate of ammonia, with cinch.; Insteam of 6th day of 13 days. The patient 10th, Quina, with 4 oz. port wine. Balf oz. of brandy every three hours. On of 6th day of 13 days. The patient 10th, Quina, with 4 oz. port wine. attach. atta	Carbonate of ammonis, ipec., and tinct. Sop. 22, end cinch.; 8 oz. port wine daily. Carbonate of ammonis, with cinch and Feb. 25, end aquills, from 20th to 23rd; then am- of 6th day of monia and sp. chlorof., and 6 oz. wine, treatment and oz. of brandy every three hours. On of 6th day of 7th, iod. pot., with cinch.; † April 3th, end oz. of brandy every three hours. On of 6th day of 7th, iod. pot., with cinch.; blister and 11th of attack. Half oz. of brandy every three hours; May 10, end earb. of ammonia and sp. chlor. from of 10th day of 1st to 6th; tinct. cinch; quina and treatment iron on 13th; 6 oz. wine. 8th, carb. of ammonia and cinch.; 10th, June 18, end and ammonia and sp. chlor.; 16th, 4 treatment. oz. wine; blister; July 1st, iod. pot., dipoh.
<u> </u>	<u> </u>	<u> </u>	2 2 H 89 80 80 80 80 80 80 80 80 80 80 80 80 80
88	92	120	120 99
g Left.	-	_	# Left. Pleurisy. Right upper lobe. Pleurisy.
Feb. 18, 1869. Feb. 20, 1869.	Feb. 20, 1669. April 8, "	Feb. 20, 1869. April 3, May 1,	Feb. 20, 1869. April 8, May 1, June 8,
red. 15, 1869.	Ked. 18, 1805. Ked. 20, Mar. 29, 1869. April 3,	Mar. 29, 1869. April 8, Three days May 1, before admis- sion.	Mar. 29, 1869. Three days before admission.
	Not good.		
	M., 26, Porter.	M., 26, Porter. M., 45, Sailor.	M., 26, Porter. M., 45, Sailor. M., 32,
	ei Fi	# # 5 5	r; r; æ; æ; æ;
_	\$	3 8	3 8 <i>2</i>

			71			
	Recovered.	Died two days, after admission; admitted in a sinking state. P. M.	Becovered. Patient remained in hospital in consequence of the peruistence of bysentery.	Recovered. Patient suffered after stack from Wasting Palry, and remained a long tall on that account.	Recovered. Mild attack, followed injury to mide.	Recovered.
	Dec. 1st. 85 days.	Dec. 23.	March 22. 72 days.		March 29. 27 days.	May 24. 28 days.
and of attack.	Ost. 81, end of 8rd day of treatment.		Jan. 9, end of 6th day of treatment and 9th of attack.	Jan. 18, end of 18th day of treatment.	March 10, end of 8th day of treatment	4 oz. May lst, end of 5th day of treatment and 8th of attack.
to 18th; every two bours to 21st; then and of attacks 8 os. wine daily.	Oarb. of ammonia, sp. chlorof., and bark; Oet. 31, end 6 os. port wine daily. Blister. Qui of 3rd day of nine.	Slet, half cunce brandy every bour and a half; ammonia and sp. chlorof.; 22nd. 5 drs. brandy every bour and half.	Carb. of ammonis and sp. chlorof.; 8 os. Jan. 9, end March 23. of 6th day of 72 days. treatment and 9th of attack.	Carb. of ammonia and sp. chloroff.; 6 oz. Jan. 18, end port wine daily. Blisters. treatment. treatment.	Carb. of ammonis and spirit chlorof. March 10, end March 29. Blister. treatment treatment	Carb. of ammonia and sp. oblorof. 4 os. port wine daily; 30th, blister.
: 		84	· ·	6		
	<u> </u>	- 188 	211	116	+	<u> </u>
	Base Left. 112 Pleurisy.	Whole of Bight. Bronchitis.	Half Right	d Left. Pleurisy.	Small part Left.	Base Left. 106
	:	:	1870.	•	•	•
	Oet. 27,	before Dec. 21,		Jan. 5,	Ker. 2,	Apr. 26.
	Was reco. Measles 11 Oct. 27, vering from days before Measles. admission.	6 days before	Dec. 31, 1869. Jan. 3, 1870. Half Right. 112			Three days before admission.
	Was recovering from Measles.	Good.	Not good. Suffering from Dysentery.		Good.	Good
	M., 36, Labourer.	M., 24. Boiler Maker.	M., 22, Sailor.	M., 40. Bailor.	M., 36. Sailor.	M., 45, Sailor.
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DELAYED UNION OF FRACTURES.

By HENRY LOWNDES.

SUBGEON TO THE LIVERPOOL NORTHERN HOSPITAL.

"Delayed Union" is a convenient term, that has come into use as applied to fractures in which the process of repair is, from some or other cause, checked, or temporarily suspended, but which do not deserve the unpleasant appellation of Ununited Fractures. Cases of delayed union are not unfrequently admitted into the Northern Hospital from sea. The fracture has occurred on shipboard, perhaps many weeks before, and has been treated inadequately by the captain or carpenter. Unsuitable diet, perhaps a tendency to scurvy, and the uneven surface over which the ship has to make her way, all combine to prevent the process of union going on satisfactorily. So we often find very partial union, sometimes union with bad position; sometimes, but rarely, no union at all. In these cases the union is generally simply delayed, or we may say postponed. Nature does what she can under the circumstances, but, failing, simply reserves her powers; she does not retire entirely from the scene, but is ready to resume action as soon as circumstances are more favourable. Accordingly we find that in hospital, with good diet, and treatment sufficient to keep the ends of the bones firmly bound together, the process of union almost always recommences in these cases, and goes successfully on, and this even after long periods of suspension. Mr. Manifold has mentioned to me a case he had, where the thigh had been broken six months before at sea, and on admission there was found to be no union whatever, yet the bone united readily under simple I had recently under my own charge the following interesting case, in which no union was found on admission eleven weeks after the accident.

John McGregor, æt. 22, mariner, was admitted into the Northern Hospital on August 31st, 1869, with fracture of tibia and fibula of both legs; simple of the left, compound of the right. He had broken his legs at sea, on the 14th of June, about eleven weeks before admission. He was thin and pale. The appearance of the right leg was peculiar; the fracture was at the lower part of the middle third, and the end of the upper fragment was protruding through the skin, black and dry, overlapping the end of the lower part of the bone. There was no suppuration about the wound, nor The protruding fragment lay immediately in had there been any. front of the other, and a narrow splint had been applied to the front of the leg, and had so far pressed this exposed bone down as, I presume, to prevent any access of air to the cavity of the fracture. There was no union whatever either in this leg or the other, which had sustained a simple oblique fracture of both bones, with lateral displacement and overriding. The shortening in both limbs was Both limbs, but especially the left, were much about equal. wasted. They had been put up at sea in a manner not entirely calculated to prevent movement at the seat of fracture, namely, with one narrow splint along the front of the tibia. The inadequacy of this mechanism, combined with indifferent food, and an inquiet ship, was sufficient to prevent union.

In the Hospital, a good diet, with porter, and afterwards port wine in addition, was given. The right leg was placed on a swing splint, with a poultice over the wound; the left was treated with the ordinary side splints, very firmly bandaged, and disturbed as seldom as possible. With regard to the left leg, it was a long time before any firmness began to show itself, but in about three months evident union was taking place. It was fully five months from the time of admission before this limb was perfectly strong.

Suppuration commenced, soon after admission, around the exposed bone of the right leg, and on the 3rd of October I found the upper fragment had sunk down to a level with the lower. On October 11th, the dead bone, which comprised nearly the whole thickness of the shaft, and was about half an inch in length at its upper surface, and shorter below, came away. This was nearly four months after the accident. After the removal of this dead

bone, union soon began to appear, and was, after all, complete in this limb sooner than in the other. In January, 1870, he was able to walk about a little in the wards with a stick, but the muscles, particularly those of the left leg, were much wasted. He went home to Glasgow, on February 22nd, and I had a letter from him about six weeks after, saying that he was able to go about without a stick, and was getting stout and well.

I agree with the writer of the able article on "Delayed Union" in Holmes' System of Surgery, in thinking that in hospital practice the principal cause of delayed union, and of ununited fracture, is probably the too great anxiety to preserve the length of the limb.

It may be true, that in simple fractures we cannot by any ordinary extension draw out the limb to more than its normal length, but in cases where the soft parts are much damaged, the case is different. Moreover, there is frequently a piece of bone, of greater or less size, that must necrose and come away, and if we have kept the limb so extended that when this piece comes away the fractured ends are kept from coming into contact, we cannot expect union.

It is better to be content with some overriding of the fragments than to run any risk of non-union, not to speak of the other obvious objections to any strenuous attempts at extension in cases of severe compound fracture.

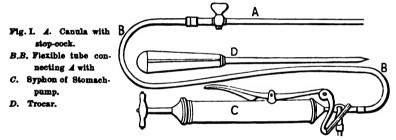
THORACENTESIS.

By J. WALLACE, M.D.,

ASSISTANT PHYSICIAN TO THE LYING-IN HOSPITAL AND LADIES' CHARITY.

Thoracentesis, or paracentesis thoracis, was an operation so well known in the most remote periods of medical history, that no true advance had been made upon the operative methods described by Hippocrates until within comparatively recent times. After stating what he believed to be the pathology of the lesion founded upon observation of the lower animals (viz., that tubercles in the lungs originate Empyema); and after recommending that the existence of fluid in the pleuritic cavity be ascertained, by shaking the patient by the shoulders, or from its protruding externally, Hippocrates describes three distinct methods of operating:-1st, to cut down upon the third rib from the last and to perforate with a trocar. 2nd, to perforate the rib with a trepan. And 3rd, to use the actual cautery. Both Actius and Paulus Egineta mention the operation, and the latter gives so minute a description of how it is to be done, that Scultetus describes it as the method of Paulus, and prefers it to that of Hippocrates. Ambrose Paré combined the cautery, the trocar, and canula in one instrument, thus uniting the different ideas of the ancient physi-With this instrument, he perforated the thoracic wall, if through the intercostal space so far well, if not, he perforated the cartilage or even the rib itself; for, he coolly states, that wherever the means of communication are placed, the pus will immediately begin to flow; or as the pith of the original has it, "Quod si corpore, thorace, et costis amplioribus, vastisque æger exteterit, licebit costas ipsas terebello dividere et forare. Quomodocunque apertio facta fuerit pus erit sensim et vicibus interpollatis effundendum." (1582.)Nearly a hundred years later, in the Armamentarium Chirurgicum Joannis Sculteti, Physici et Chirurgici, published in 1669, in table 37, is a description of the manner of performing thoracentesis, and how the residuum of the fluid was drawn off by a syringe. Passing on to the time of Dr. Laurence Heister, about 1740, we find him returning to the Hippocratic method of incision — a procedure approved of even by the late Professor Syme - and he gives it preference over the two other methods then in use. These various methods consisted, —in incision and subsequent puncture with trocar and canula; and in pushing the trocar and canula through the intercostal space at once, -a method disapproved of, he says, by cautious surgeons. After drawing off the fluid, a flexible metallic tube was sometimes introduced, and retained in situ. Heister made a transverse incision, to permit of a sufficient opening into the thorax for the entrance of the finger, and for the separation of the lung from its adhesions to the pleura, whereby exit is given to the peccant humours; "which last method," he says, "is certainly preferable to the former, notwithstanding it requires more diligence in the operator, and resolution in the patient." Heister rejects the use of drainage-tubes, and falls back upon the Hippocratic tent. From the time of Heister, no advance was made until Laennec published his treatise on diseases of the chest, in 1818. The pathology and diagnosis of pleuritic affections was established with such certainty and precision, that it followed as a necessary consequence that medical men would recognise the existence of pleuritic effusion more frequently, and be thus induced to perforate the chest, and give it exit. Yet the contradictory opinions of the leading physicians and surgeons of the last fifty years show that no true advance in improving or perfecting the operation was made, but that upon the whole it was rather drifting into disrepute when Dr. Bowditch, of Boston, U.S., published the successful results of his practice: a practice which, as tested in this country by Gairdner, Begbie, and others, at once placed thoracentesis upon a higher and more satisfactory platform, as an operative measure of great value. Dr. Bowditch operates with the trocar and canula, and syringe of Dr. Wyman, of Cambridge, U.S. Mr. Jowett and others proposed modifications of the syringe employed by Scultetus, and Dr. Wyman perfected the instrument, nearly two

hundred years after it was first used by that shrewd old physician and surgeon. Amongst those who still object to the operation, Dr. Fuller takes the lead, his objections being based on theoretical grounds, which are fortunately not supported by the results of The opening and shutting of stop cocks may be conpractice. fusing, though they can hardly be so to a cool head and dexterous hands, but so far as practical utility is concerned, the instrument is complete; a statement vouched for by Professor Gairdner, and testified to by my own experience. However, there is one objection, viz., that patients complain bitterly of the pain caused by the slight movements of the canula made in extracting the fluid. This is avoided by the simple modification which I have arranged, which has this other recommendation, that it does away with the confusing opening and shutting of stop-cocks, objected to by Fuller. The accompanying is a drawing of this instrument, which was constructed in a rude form by myself in the exigencies of country practice, when I could not procure Wyman's instrument.



Various other methods have been proposed, with the same object in view, namely, the exclusion of atmospheric air; as, for example, a cupping glass and exhaustive syringe (Laennec); puncturing the chest under water; drainage tubes (Scultetus, Chassaignac, De Morgan, Goodfellow, &c.); an air-tight bag attached to the canula, &c. Mr. Alfred Higginson has adapted a very ingenious arrangement, which may be considered chiefly useful for washing out the pleuritic cavity with antiseptics. He punctures the chest with a trocar and canula, fits his syringe to the canula, and by retaining the shorter end of the tube under water, he can empty the pleural cavity, and wash it out, without allowing the entrance of air.

In proceeding to consider "the place of election" for puncturing

the thorax, different localities are recommended by various autho-Hippocrates chose the space between the third and fourth ribs, counting from below; the method of Paulus was to puncture on a line with the middle of the sternum and the space between the fifth and sixth dorsal spines, at a third of the distance from the sternum; Laennec recommends the fifth intercostal space a little in front of the digitations of the serratus magnus; and Stokes and Townsend argue in favour of this place, reasoning from the analogy of a spontaneous opening generally occurring in an elevated situation; Bowditch plunges the trocar into the space between the eighth and ninth, or ninth and tenth, or tenth and eleventh ribs, in a line let fall from the angle of the scapula; but he taps at any point where he is satisfied fluid exists, at its most depending part. In selecting the precise intercostal space, it is advisable to choose a spot one and a half inches higher than the lowest point at which the respiratory murmur can be heard in the healthy lung of the opposite side; and in most cases it would be inadvisable to puncture below the level of the end of the ensiform cartilage. But, first of all, test the correctness of diagnosis a tew days before operating, by means of the small exploring trocar and canula; or by the exploring needle of Dr. Davies. Having thus assured yourself, ask the patient to sit on a chair saddleways, and to fold his arms over the back of the chair; whereby he supports himself for the ordeal, while the elevating of the shoulders enlarges the intercostal spaces. In the operations I have performed, I have chosen an intercostal space midway between the perpendicular lines of Paulus and Bowditch, in front of the angles of the ribs; and having determined on the spot, I press the point of the left forefinger deeply into the intercostal space, plunge the trocar and canula through the depressed part, keeping as near the upper margin of the lower rib as possible, and elevate the point of the trocar as it passes through the parietes of the chest and enters the pleuritic cavity. The next step is to withdraw the trocar, turn the stop cock of the canula, and attach the syphon of the stomach-pump by the intermediate flexible tube; and while an assistant steadies the canula, the operator proceeds to slowly pump the fluid out of the thoracic cavity. Should it be advisable

to inject an antiseptic lotion, you reverse the action of the syphon, throw in a sufficient quantity, and again withdraw it. It will be observed, that this instrument, as well as Dr. Wyman's, differs from all others in the powerful extracting momentum which can be applied; indeed, the success of the operation, in a great measure, depends upon whether this momentum, plus the natural inspiratory effort, is greater or not than the strength of the morbid structures which bind down the lung and prevent its expansion. That is a matter which the success of the operation itself only can prove. After withdrawing the canula, no dressing is necessary.

CASE I.— Hydrothorax, almost completely latent, in a woman of good constitution. Failure of therapeutics. Thoracentesis—permanent recovery.

M. P., a mill worker, æt. 19, who had previously enjoyed good health, consulted me on July 10, 1866, for weakness alone, her friends thinking she was in a decline. She had no pain, and looked chlorotic; her tongue was clean, her pulse normal, and she gave the following history:—In February, while at work, she experienced rigors, followed by sore throat, and a cold which confined her to bed two days, after which she resumed employment, and has gradually since become weaker. Her mother noticed that she breathes laboriously, and perspires profusely when asleep. Early in the illness she had occasional pain in the left side. She never had any previous illness.

Physical examination gives marked dulness on percussion over left side of chest; total absence of respiration, vocal thrill and diminished vocal resonance, anteriorly as high as the second intercostal space in the infra-clavicular and axillary regions, and posteriorly as high as the spine of the scapula. The girth of the left side exceeds the right by one inch; and there is slight fulness of the intercostal spaces. At the left apex the sound of Skoda is well marked. No pulmonary disease. Cardiac system normal, with the exception of lateral displacement to the right, so that the apex impulse is felt close to the left of the sternum. Other systems normal.

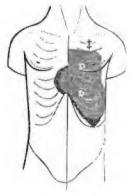


Fig. II. D. Region of dulness.

† Heart apex beat.

‡ Region of sound of Skoda.

Treatment.—Rest in bed; nutrients; a succession of blisters, and 3ss. thrice daily of the mixture R. Potassii Iodid. 3ii. Potassæ Acetat. 3iv. Sp. Eth. Nitros. 3ss. Aquae ad 3viij. Solv.

July 29th.—The effusion increases in quantity, yet she has been able to walk two miles to consult me. As she insisted upon knowing whether she was in consumption or not, I demonstrated my reply by introducing Wood's needle through the seventh intercostal space, and withdrawing into its glass cylinder Mxii. of clear fluid. Two days later, Dr. Maclaren, of Carlisle, having given chloroform, I performed thoracentesis, and extracted twenty-four ounces of transparent serous fluid, of a greenish tint. After the operation, percussion gave a pretty clear note over the whole of the left side of the thorax, and the respiratory murmur was distinctly audible over the same region, though somewhat deficient as compared with the healthy sound. Blisters were reapplied over the affected region, and rest in bed enjoined.

August 22nd.—Treatment by diuretics, tonics, and counterirritation was continued up to this date. Percussion note is comparatively clear, as low as a circular line on a level with the tip of the xyphoid cartilage. Respiratory murmur is very distinct over the upper part of the chest, becomes fainter and more distant as the stethoscope is moved downwards to the limit mentioned, below which there is dulness on percussion, and almost complete absence of respiration. The friction sounds have nearly all disappeared, except in the infra-scapular and infra-axillary regions. The patient was recommended to go to the sea-side for a fortnight.

1867. March 25th.—Thoracentesis was performed nearly eight months ago. She is strong and healthy. It would be difficult to say that there had been disease of the left half of the chest, were there not a slight deficiency of respiratory murmur at the base of

the left lung, and a small area which gives a dull percussion note that might be considered splenic.

CASE II.—Hydrothorax, subacute. Thoracentesis. Recovery.

M. C., set. 40, a warehouseman, of good health previously, came under our care on June 25th, 1868. Dr. Bruce diagnosed pleuritic effusion, occupying the lower half of the right thoracic cavity; this diagnosis I confirmed.

Treatment by diuretics, blisters, &c., having failed, I performed thoracentesis on July 11th, and extracted ten ounces of clear fluid.

July 17th.—The patient feels much better, his dyspnœa has gone. Friction sounds are heard over the lower half of the right lung.

July 23rd.—The respiratory murmur is distinct. He breathes normally. His appetite is good, and his strength is returning rapidly. rapidly.

CASE III. - Hydrothorax of old standing. Thoracentesis. Recovery.

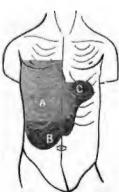
A. B., a Norwegian sailor, æt. 20, newly arrived from sea, consulted us on January 22nd, 1869, and complained of shortness of breathing, an irritating cough, with little expectoration, from which he had suffered for several months.

On examination, the right side of the chest was found flattened and one inch less in circumference than the left: expansion on the right side was imperceptible. The percussion sound of Skoda was heard at the right apex, fading gradually downwards to a dull note at the nipple. Perpendicular dulness extended from the nipple downwards for eight inches, nearly as far as on a level with the umbilicus.

Fig. III. 4. Dulness on percussion.

- B. Hepatic dulness.
- † Position of exploratory puncture.
- C. Cardiac duliness.

Respiratory murmur was deficient, or distant at the upper margin of the dulness, and absent below that; it was intensified at the apex of the lung. The heart's beat was heard over the whole of the dull region. Palpation gave faint fluid impulse anteriorly, but this was difficult to detect.



January 27th.—Dr. Bruce confirmed the above description. I made an exploratory puncture, and drew off about 3 iii. of clear fluid. The patient was to continue taking the following mixture:

R Potassii Iodid. 3i.; Potassae citrat. 3iv.; Tinct. Digital. 3iii.; Syrup. Aurantii 3i.; Aquæ ad 3viii. Solv. 3ss. four times daily, and repeat the blister posteriorly.

January 30th.—I performed thoracentesis, and extracted a pint of greenish serum, which coagulated on cooling.

January 31st.—He feels somewhat better. Was ordered to apply a large blister to the anterior and lateral aspects of the right side of the chest, and to take one of the following pills, with each dose of the previous mixture, R. Pulv. scillae 3ss. Pulv. digital. 9i. Pil. hydrarg. gr. x: Theriacæ q. s. ft. pil. mas. et in pilul. xx. divide.

February 2nd.—His pulse is normal and his tongue clean. His appetite good, and his chest resonant throughout. Respiratory murmur over the whole of the affected region is attended by friction sounds. The liver has risen to its normal position.

February 24th.—Measurement of both sides of the thorax is alike—eighteen inches; the hepatic perpendicular dulness is five inches. Respiratory murmur is faint towards the base of the right lung.

March 6th.—On taking a very deep inspiration, there is slight friction sound heard at the right base, otherwise the chest sounds are normal. The patient says he feels quite well, and begs to be allowed to go to sea. I advised him to go home to Norway for some time, which he consented to do.

CASE IV.—Hydrothorax on the verge of Empyæma, of eighteen months duration. Thoracentesis. Recovery.

This remarkable case occurred in the practice of my friend Dr. George Johnstone, with whom I was partly associated in the treatment of the case, and to whom I am indebted for the following notes:

C. S. æt. 35. July, 1867, a saddler, had enjoyed good health until three years ago, when hæmoptysis followed a blow on the

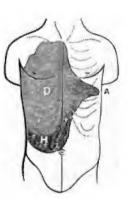
chest. He was attended by a medical man who said he was consumptive. He went into hospital where he was considered to be consumptive and dismissed as incurable. A year and a half ago he had an inflammatory attack and again went into hospital, from which he was again discharged unrelieved.

He then came under my care (Dr. Johnstone), and has been under treatment by counter irritation, diuretics, with Iodide of Potassium, tonics, &c. By these means his breathing has been somewhat relieved, but the physical signs have during this period remained the same as here stated:

Fig. IV. D. Dulness over whole of anterior right chest.

- H. Hepatic dulness as low as umbilicus.
- Cardiac dulness, and apex beat displaced 1s inches to left of nipple.

There is complete absence of expansion on inspiration, and dullness on percussion over the whole right side of the thorax anteriorly, from the clavicle to the level of the umbilicus, and extending to the left of the sternum where it becomes continuous with the cardiac dulness. The heart is displaced to the left



of the nipple, for about $1\frac{1}{2}$ or 2 inches. Dulness extends laterally and posteriorly over the whole of the right side of the chest for an equal extent. The intercostal spaces bulge, and the respiratory murmur is absent over this space. Measurement of the right side, on a level with the tenth dorsal spine is $17\frac{1}{2}$ inches,—of the left side is 16 inches. Palpation gives fluid impulse, well marked.

On July 9th Dr. Wallace saw the case with me, confirmed the diagnosis, and performed thoracentesis with a small trocar and canula, withdrawing fifty-three ounces of a milky yellowish serum, to the great relief of the patient's respiration.

July 19th.—His condition is improved. Measurements are now 17 inches and 16 inches respectively. The right apex is not so dull as formerly, and there is bronchial breathing, and bronchophony over the right infra-clavicular region, but this is much more marked over the right supra-clavicular region. The patient can now

lie equally well on either side, which before was impossible; and he states that he breathes comfortably except when he walks up hill.

July 27th. — Physical signs same as at last report. Performed thoracentesis with Dr. Wallace's instrument, and extracted 110 ounces. Relief was great and immediate, but during the latter part of the operation a fit of coughing came on which lasted continuously for four hours. It was not checked as it was curative in its tendency, by expanding the compressed lung.

July 31st. - The patient reported himself quite well.

August 5th.—Gone to the country for some weeks, after which he will resume his employment.

July 13, 1869. To-day Dr. Johnstone and I examined the subject of the above history, two years having elapsed since thoracentesis was performed and twenty-two months since he resumed his employment, during which period he has not suffered a day from illness. His body is well nourished. Measurement and expansion are equal on both sides of the chest; the vocal thrill, distant respiratory murmur and vocal resonance on the right side are faint but quite perceptible; comparative dulness continues, and increases in intensity on the right side from the apex to the base. Hepatic dulness extends about one inch lower than usual.

June 30th, 1870.—Dr. Johnson took me to examine C. S. again. His general health is good, and he is able to work. On looking at the chest, the right shoulder is observed to be depressed, and the angle of the scapula is fully half an inch below the level of the left scapular angle. There is flattening of the right infra-axilliary region and bulging forwards of the right infra-clavicular and mammary regions; the intercostal spaces are normal in appearance. Vocal thrill is very indistinct on the right side, but is present there. Measurement from the ninth dorsal spine over the right nipple is 17\frac{1}{2} inches; over the left nipple it is 17% inches. The right half of the thorax is dull on percussion. Respiration is heard distinctly all over the right half of the chest, anteriorly as low as on level with the xyphoid cartilage, but indistinctly towards the base of the right lung, and more distinct in the axilliary region. In the right supra-spinous and infra-spinous regions a friction sound is heard at the beginning of inspiration,

and below the right scapula there is a peculiar rubbing, drumming noise detectable on deep inspiration.

Owing to their appropriateness to this case I cannot help quoting the following remarks of Dr. Peddie, (Edin. Med. Journal, Aug. 7th, 1850,) "Of course when a cure in this case is said to be complete I admit that there is a lung of which perhaps less than one-third only is fitted to perform any part in the function of respiration, and that there is an enormously thickened pleura with strong adhesions connected therewith. Notwithstanding all this I regard the case as satisfactorily cured, seeing that the functions of respiration and circulation are now carried on compatibly with existence; that the strength is re-established and fully adequate for the duties of his calling; and that instead of feeling life as a burden he is now in a condition, and is seeking, to enjoy it."

CASE V.—Empyoma and Pneumothorax in a man of robust build and constitution; suspicion of Syphilitic taint.

Thoracentesis performed six times, extracting altogether about two gallons of pus; fixture and non-expansion of lung. Death.

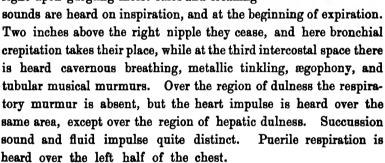
W. P. æt. 40, who came under my care on September 20th, 1865, was in good health until August, 1864, when in Canada he had rigors and sweats (malarial?) which frequently recurred during the winter. In March, 1865, when raising a heavy weight, he was seized with a violent pain in his right side, inflammation followed and he received mercury to salivation. A second medical man in consultation ordered cod-liver oil. He returned to England in the beginning of September, when he exhibited the following symptoms.

Respiration was laborious and 30 to 40 per minute, on inspiration the right side of the chest was observed to be immobile, vocal thrill absent on this side. Measurement on a level with the tip of the xyphoid cartilage was after expiration, on the right side eighteenand-half inches, on the left side seventeen inches. There was fulness of the right intercostal spaces as high as the nipple. Percussion gives comparative dulness at the right apex, passing gradually into a tympanitic sound on a level with the right nipple, from which spot complete dulness extends downwards as far as two

inches beyond the margin of the ribs, where there is epigastric fulness.

- Fig. V. P. Pulmonic dulness.
 - T. Region of Pneumothorax.
 - H. Humoral dulness.
 - L. Liver dulness.
 - C. Cardiac region.
- t Region of cavernous breathing, metallic tinkling segophony, and tubular musical murmur.

Posteriorly in the right infrascapular region the percussion note is tympanitic. Below the right scapular angle there is marked dulness. The left side of the chest is highly resonant throughout. At the right apex gurgling moist râles and creaking



Expectoration muco-purulent, sweet to the taste, and without smell. His pulse is 124, weak and regular; he is disinclined for food; his tongue is clean anteriorly, not furred posteriorly; and his bowels are constipated. On the back of the chest and abdomen is observed an acne rash, which leaves copper-coloured marks after healing. (Pustular Syphilide?) He admits having had gonorrhoea twenty years ago.

His chief complaint is paroxysmal difficulty of breathing, threatening suffocation.

Treatment consisted at first of cod liver oil, nutrients, diuretics, blisters, and iodine counter irritation. On Nov. 8th, no manifest improvement having taken place, I performed thoracentesis with great relief to his breathing. Without following this case in detail it may be stated, that between that date and April 3rd, 1866, I performed thoracentesis six times, and extracted nearly

two gallons of pus, affording on each occasion great relief to the patient's respiration, but with no curative result. After the last two operations, I injected into the pleuritic cavity, Tinct. Iod. Co. 3iii, the presence of which, diluted with water, the patient did not feel. Owing to the hopeless nature of the case, I had resolved to introduce drainage tubes as a last resource, but the patient died ere this was carried out. His sister stated that when he was rising from bed (on April 25th, 1866), to prepare for my visit, he suddenly called out "something has given way," placed his hands over his stomach, and while shrieking with pain there was a gush of pus from his mouth and nostrils. Collapse followed, and he died shortly thereafter.

The whole of the right side of the chest was found on percussion after death to be tympanitic; the Epigastrium was distended, and the region of the stomach filled with fluid. No post mortem examination was allowed. Dr. Thomson of Dunoon, and Dr. Maclaren of Carlisle assisted me on two occasions in performing thoracentesis on this patient.

CASE VI.—Empyæma following Enteric Fever. Thoracentesis. Recovery of good health, with a sinus discharging occasionally.

M. S. æt. 7 years, naturally healthy, had enteric fever in February 1868, followed by pleurisy, which did not yield to treatment, and from the feeble condition of the patient Dr. Bruce and I agreed that operative interference was inadmissible. However, on March 3rd she was threatened with suffocation, and in the emergency I plunged a trocar and canula into the right side of the chest and withdrew a quantity of pus. The puncture healed, but in June an abscess formed and opened spontaneously between the sixth and seventh ribs, and continued to discharge.

September 16th, 1868. On examination, the respiratory murmur is found to be returning over the whole of the right side of the chest; and over the lower third of this side there is friction sound detectable. The right half of the thorax measures eleven inches; the left half, twelve inches. Her general health is much improved.

July 16th, 1869.—Since last report the sinus has healed, reopened, and remains open. She has grown tall, and appears to

enjoy good health. On examination of the chest, both sides are found to measure alike. In the right infra-mammary and infra-axillary regions complete dullness exists. Posteriorly, over the right half of the chest, comparative dullness is most marked towards the base and apex. There is a total absence of respiration over the regions of dullness. Bronchial respiration, and bronchophony, are heard at the right scapular angle. To the wound carbolic acid dressing is applied.

CASE VII. - Empyæma. Thoracentesis. Recovery.

T. I. æt. 38, May, 1867.—A robust man. Had pleuritis, which passed into empyæma at the end of a month. I was then consulted, and found a collection of fluid occupying the lower half of the left side of the chest, and protruding in the tenth intercostal space. Thoracentesis was performed, and about a pint of pus evacuated. Six months later, I again saw the case, and found a sinus discharging pus. At the end of two years the sinus had healed, by the use of carbolic acid dressing; and the patient recovered, but with marked flattening of the left side of the thorax.

CASE VIII. — Circumscribed Empyæma subsequent to Pleuritis—verging towards spontaneous cure. Thoracentesis. Recovery.

T. T. a sailor, æt. 19, consulted me in August, 1869, for a swelling on the right side of the chest over the eighth intercostal space. I detected empyæma; performed thoracentesis twice during three weeks, and he recovered completely. There was not much pus, but he had marked dulness on percussion, and deficient respiratory murmur over the whole of the right half of the thorax. The history he gave was that of an attack of pleurisy when at sea.

CASE IX.—Subacute Pleuritis. Hydrothorax. Thoracentesis. Recovery.

J. McF., a healthy boy, aged three years, took ill on June 14th, 1870, with feverishness, delirium, and obstinate constipation from injudicious diet. By the use of purgatives and enemata he became so well that I did not see him for nearly a week. I then discovered pleuritic effusion into the lower half of the right thoracic cavity.

Treatment consisted in the administration of nutrients, salines, diuretics, blisters, and complete rest in bed; yet the fluid increased, and on July 20th—twenty-four days after the first discovery of effusion—I punctured the chest with an exploring needle, and withdrew about six ounces of pus.

On July 26th, chloroform having been administered by Dr. Baker, I evacuated forty-six ounces of purulent fluid. The lung expanded, and the depressed liver rose at once to its normal position. The patient was ordered cod liver oil and Syrup of the Iodide of Iron, and sent to the country.

August 16th.—On examining his thorax, there is found dulness on percussion over the lower half of the right lung; but the respiratory murniur is heard, though faintly, as low as on a level with the xyphoid cartilage. The patient is greatly improved in his general health.

Commentary.—It would not be consistent with the subject of this paper to enter into any prolonged comments on the cases recorded; neither would it be right to discuss here the pathology and diagnosis of those lesions of the thorax which they exemplify for these topics belong more properly to a description of the lesions themselves than to the method of treatment by thoracentesis. But let me point out the remarkable curative effect of the operation as demonstrated in Cases I., II., III., and IV., in all of which internal medicines and external counter-irritation proved worthless and inert, until the removal of the serous fluid seemed to give to therapeutics a new impetus, carrying the patients onward to successful cure. Had thoracentesis not been performed in these cases. I believe empyæma and an unfavourable termination would have speedily followed in all of them. What that termination would possibly have been is shown in Case V., where a probable syphiltic taint, malarial fever, pleuritis treated by mercury to salivation, ended in empyæma with pneumothorax and pleuropulmonary fistula. This complication gave rise to a loud musical note during inspiration and expiration, which did not yield-and could not possibly do so -- to any treatment. The remaining cases exemplify more favourable forms of empyæma, - Case VI. being that of a young girl, seven years of age. Among Dr. Davies' cases of recovery from empyæma, five were patients under six years and one under eleven years of age. Case VII. recovered under the antiseptic influence of carbolic acid dressings, with the very usual sequence of flattening or falling in of the thoracic wall. Case VIII. presented an uncommon form of empyæma, the fluid being circumscribed within narrow limits at the base of the pleuritic cavity. In such cases the result is invariably recovery.

At what period of the disease should thoracentesis be resorted to? Dr. Hamilton Roe says, "In any instance where paracentesis was employed in an early stage of empyæma, or inflammatory hydrothorax, it was successful, and failed to cure only in those where it had been long delayed." This is in accordance with the experience of Laennec, Davies, Allison, Hughes, Cock, Peddie, Walshe, Bennett, Gairdner, Budd, and many others. that delaying the operation accounts for the unsuccessful practice of Boyer, Dupuytren, Sir A. Cooper, Gendrin, and others. Dr. Addison, in strongly opposing the operation as one of the most deceptive in general practice, points out one source of failure in the admission of atmospheric air, which changes a serous into a purulent fluid. Watson thinks it ought not to be performed unless the patient's life is in jeopardy, as in acute pleuritis. all these contradictory views were expressed before the introduction of Bowditch's method of operating; concerning which Dr. Gairdner says, "It appears to me to be in every respect an improvement so important that it may be said to open up a new history for the operation of paracentesis thoracis." Dr. Walshe states, in his excellent work on diseases of the chest, "the determination of the period of the disease most favourable for operating is a point of very serious importance:" and further on he explains his decision so clearly, that I cannot forbear quoting his exact words. "There can be no question that the fitting time for operation has come when a tendency, insuperable by medical means, exists either to increase or non-absorption of the fluid." Hippocrates allowed fifteen days to elapse before resorting to thoracentesis; but no distinct rule can be set down, for surgical interference must depend upon the existing local and constitutional states of each individual case, seeing that serous

pleuritic exudation becomes more rapidly changed into pus in the young than in adults. Formerly tapping the chest was a matter of "serious importance;" now, with the certainty of preventing the admission of air, the operation is not attended with evil results; and Dr. Bowditch admits having punctured the chest seven times without getting fluid, and no bad consequences followed. Yet it is well to recollect that accidents may occur, followed by dangerous or fatal consequences; seeing Laennec himself once "transfixed the diaphragm and pierced the liver, and that through the fifth intercostal space." Dr. Watson saw a large spleen punctured through the diaphragm, and death followed from peritonitis. The lung also is apt to be wounded.

In conclusion, the following are the rules laid down by Dr. Bowditch as a guide for the performance of Thoracentesis:—

"1st.—When there is severe, permanent dyspnœa, or orthopnea, however acute the disease, if I find fluid filling one pleural cavity or nearly filling it.

2nd.—When there are occasional attacks of orthopnes threatening death, even if there be not sufficient fluid to fill more than half the cavity. If the fluid seems to be the cause of the dyspnœa I operate, because occasionally I have lost a patient when waiting for more extensive physical signs. This rule I apply to acute and chronic cases.

3rd.—I use the trocar after three or four weeks of ineffectual treatment without any absorption being produced.

4th.—In chronic idiopathic hydrothorax or latent pleurisy, with simply physical signs to indicate extensive effusion, but when rational signs are either very slight, or none at all, save a general malaise and weakness, &c."

The morbid conditions of the thoracic cavity, for which paracentesis thoracis has been recommended, are the following:—

- a. Acute pleuritis, if orthopnea threatens death; chronic pleuritis, latent pleurisy or hydrothorax, hydatid cysts, after treatment failed. (Walshe, Watson, Trousseau, &c.)
 - b. Empyæma to aid the action of therapeutics.

- c. Hæmothorax, either in its primary, or secondary (suppurative) stage. (Larrey, Andral, &c.)
 - d. Hydropneumothorax as a palliative. (Bennett.)
- e. Collections of serum or pus in the duplicature of the mediastinum, and hydropericardium. (Laennec, Senac, Bouillaud, Romero, Aran, &c.)
 - f. Pneumothorax. (Bowditch.)

TABLE FOR THE EXAMINATION OF URINARY CALCULI.

By J. CAMPBELL BROWN, D. Sc. London.

LECTURER ON CHRISTRY AND TOXICOLOGY AT THE ROYAL INFIRMABY SCHOOL OF MEDICINE.

- 1. Heat a portion of the powdered Calculus upon platinum foil.
- Destroyed. (a) Uric acid: Ammonic urate: Cystine: Cholesterin:
 Bile-pigment.
 - (b) Uric acid from Calcic and Sodic urates.

 Ammonia from Triple Phosphate. Oxalic acid from Calcic oxalate.
- Not Destroyed. (c) Calcic Phosphate: Calcic Carbonate.
 - (d) Calcic Carbonate from Calcic Oxalate and
 Urate. Sodic Carbonate from Sodic
 Urate. Magnesic Phosphate from Triple
 Phosphate.

If it chars and gives odour of burnt feathers, add to another portion a drop of concentrated nitric acid and evaporate to dryness: pink colour; cool, and add ammonia: purple colour; Uric acid or Urates. If the odour is peculiarly disagreeable, resembling carbonic bisulphide, dissolve in ammonia, and allow the solution to evaporate spontaneously; microscopic six-sided plates indicate Cystine. Mix another portion with Lime, Ammonia may be evolved from the Urate or Triple Phosphate.

2. Ignite another portion in the blowpipe flame until it burns entirely away (Class (a), see above), or leaves a white residue. If it fuses, it consists of the mixed Phosphates of Calcium, Magnesium and Ammonium. Place a portion of the residue on red litmus paper and moisten with a drop of water; alkaline reaction indicates Soda or Lime from Class (d) or from Calcic Carbonate. Dissolve the rest of the residue in water and filter. If the filtrate is

alkaline, add a drop of hydrochloric acid and evaporate cautiously to dryness; microscopic cubical crystals prove the presence of Sodium. Dissolve the residue, insoluble in water, with hydrochloric acid, observing whether or not any effervescence due to carbonic acid takes place; add a comparatively large quantity of ammonic nitro-molybdate, and heat; a yellow precipitate indicates Phosphoric Acid.

- 3. Boil a portion of the powdered calculus in dilute hydrochloric acid; effervescence indicates calcic carbonate; filter; neutralize the solution by ammonia, and add acetic acid in excess; a turbidity indicates Calcic Oxalate. To the clear solution (or the filtrate if calcic oxalate is present) add ammonic oxalate; a precipitate indicates Calcium, which was not previously in the state of oxalate; filter, if necessary; add ammonia, and stir; a white crystalline precipitate indicates Magnesic Phosphate.
- 4. Biliary Calculi. Cholesterin is soluble in boiling alcohol, in ether, or in benzole; and, upon spontaneous evaporation of the solution, is deposited in rhombic nacreous laminæ, which polarize light.

Bile-pigment is insoluble in ether; soluble in potassic hydrate, and, when treated with nitric acid, becomes first green, then blue, passing into violet, red, and yellow.

CANCEROUS DEGENERATION OF THE KIDNEY IN CHILDREN.

By P. M. BRAIDWOOD, M.D.

Having, within the last two years, met with four instances of cancerous degeneration of the kidney in children under two years of age, I desire thus to direct the attention of the profession to this remarkable but not very rare form of infantile disease. diagnosis of such cases is obscure, and on this account the malady has probably been often overlooked. The symptomatolgy of these cases presents no distinctive sign whereby the disease can be at once recognized, and the autopsy decides often whether the abdominal enlargement in any given instance be cancerous or not. The kidney alone may be the seat of cancer, or it may be implicated along with other viscera. Walshe, Roberts, &c., accordingly, describe "primary" and "secondary" cancerous renal growths. The former variety which is the subject of these remarks, is accompanied by certain symptoms, gives rise to certain physical signs, runs a definite course, and is the cause of death.

Cancer of the kidney, especially that attacking children, is almost exclusively encephalous in character. It is therefore not circumscribed, but diffused through the viscus, infiltrating it, and producing in fact a thorough degeneration of all the renal elements. In consistence it varies somewhat in different instances, being described in one case "as soft as the milt of a fish," but more generally being of the firmness of healthy human brain. The cancerous renal mass is neither of uniform consistence throughout, nor of one colour; but exhibits cysts, yellowish firm substance, whitish more fluid matter, and blood coagula of various sizes. "Cavities containing as much as a pint or more of clotted or fluid blood, or of blood mixed with cancerous detritus, have sometimes been found within the tumour." Cancer attacks at

[.] Roberts, Wm. A Practical Treatise on Urinary and Renal Diseases. 1865, p. 497.

first the cortical substance, and later involves the central pyramidal portion; while the fibrous covering of the kidney becomes converted into a thick membrane, readily detached, and enclosing a mass many times larger than the original organ. The degeneration—infiltration—cancerous alteration appears to me to commence, in such instances, in the connective tissue surrounding the malpighian corpuscles, and it afterwards implicates the firm fibrous tissues, while the most obstructive to its progress are the elastic tubuli uriniferi. Walshe states that the veins are sometimes plugged with cancerous masses which even extend to the vena cava; and that the lymphatic glands are often implicated.*

When, therefore, such a tumour is examined microscopically, its different portions are observed to present distinctive character-The firm yellowish, and the whitish less consistent portions of a cancerous kidney are found to be composed of delicate fibres enclosing in their meshes fusiform, round, oval, or irregular (Plate, fig. 1.) The fibres are observed to be extremely delicate, distributed sparsely, and enclosing cancer-cells, which are small, oval, or round, (Plate, fig. 1 a.) Among the fluid contents of the cysts are seen large, oval, round, or irregularly-shaped, multinuclear cancer-cells. (Plate, fig. 2 a.) Generally, at one part in the circumference of such a cancerous mass is to be seen a reddish edge of seemingly normal tissue, which on microscopical examination is discovered to consist of tubuli uriniferi and their malpighian terminations undergoing cancerous degeneration. (Plate, The urinary tubules at such a point appear to be lined by very minute, round cancer-cells, which, on being detached or when submitted to the action of dilute acetic acid, exhibit their multinuclear character and granular contents. At certain turns in the tubules the cancer-cells are accumulated in heaps, while in the malpighian corpuscles they are large, subdivided, and con-It seems probable, tain numerous nuclei. (Plate, fig. 2 c.) then, that the connective tissue cells of the cortical and interpyramidal portions, and likewise the epithelial cells of the proper renal tissue, are transformed into or replaced by cancer-cells.

^{*} Walshe, W. H. On the nature and treatment of Cancer. 1846.

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EXPLANATION OF PLATE.

- 1. Portion of the brain-like substance in a cancerous kidney. Delicate fibres form the matrix, in which cancer cells, for the most part of small size, are embedded. These cells are easily separated from the fibrous tissue, as is seen at b.
- 2. Portion of the cortical renal tissue, which is always present, to a greater or less extent, in such tumours.
 - a. Cancer cells, isolated.
 - b. Uriniferous tubules filled with cancer cells, which appear to replace the natural epithelial lining of such tubules. When isolated, these cancer cells are seen to be multinuclear, and to be filled with granules.
 - c. Malpighian corpuscles filled with cancerous cells. These are also seen occupying the interstitial fibrous tissue. Blood corpuscles are also found at this portion.
- 8. Large, oval, multinuclear cancer cells, which are met with in the fluid filling the cysts distributed through a cancerous kidney.









Cancer of the kidney in children is, in my experience, met with in the infiltrated form alone. Such a mass presents externally a more or less uniform contour, with here and there nodular projections caused by the bulging outwards of cysts. These tumours are generally of large size, often presenting gigantic proportions. In ten children, the average weight of such growths was, according to Dr. Roberts, 83 lbs, the smallest was 21 lbs, and the largest 31 lbs! "In one example, recorded by Mr. Spencer Wells, a growth weighing between 16 and 17 pounds was taken from the body of a child only four years of age."* Such growths generally contract adhesions to the surrounding parts. They "may burst into the peritoneum, ulcerate into the duodenum or externally through the skin." In their rapid increase they push aside the neighbouring viscera. The colon is situated invariably in front and at the upper part, being sometimes flattened and empty, while the mesentery is stretched over the tumour and is congested. The small intestines are pushed backwards, and to the opposite "When the growth affects the right kidney, the liver is displaced to left, often twisted on its transverse axis so that its upper surface takes a vertical direction and applies itself to the costo-abdominal wall. When the tumour is constituted by the left kidney, the stomach is pushed to right, and the spleen carried high up into the vault of the diaphragm. The thoracic viscera are displaced upwards, more or less, according to the bulk of the tumour, and in various directions according to the side affected."

In the "primary" form of cancer of the kidney, or, more correctly speaking, in cancerous degeneration of the kidney, met with among children, this viscus is alone the seat of the disease; and it generally manifests itself in patients of very tender years. Dr. Roberts has collected nineteen instances of this affection in children under ten years of age; as is seen in the following table:—

0-1 yr.	1-2 yrs.	2-8 yrs.	8-4 yrs.	7 - 8 yrs.	10 yrs.	
_1	4	6	5	2	1	= 19

^{*} Roberts. Ibid., p. 439. † Ibid., p. 439.

It attacks boys more frequently than girls. The origin of this disease is unknown, though frequently the exciting cause is believed to be a fall or blow. Of the four examples of this affection I have met with, one occurred in my own practice, and was examined after death; I was present at the autopsy of a second (through the kindness of Mr. Bickersteth, of Liverpool, whose case it was); and received the notes of the third case from Dr. Oxley, Physician to the Liverpool Children's Infirmary. The fourth occurred in a patient of Mr. Bickersteth's. This patient I saw during life, and had no doubt as to the diagnosis, although this was not confirmed by an autopsy.

The following narrative of the case which occurred in my practice, exemplifies well the symptomatoly and course of this malady, and may therefore be appropriately quoted here:—

The mother of a boy, aged nineteen months, while washing him one evening, observed a little hard lump, of the size of a walnut, situated about midway between the false ribs and crista ilii of the The child's health was good. Medical advice was at once sought, and tincture of iodine was ordered as a counter-irritant, while the internal as well as external use of cod liver oil was recommended. This treatment was persevered in till the date (three months later) of his being brought to me. The tumour meantime increased rapidly, and the child's health was becoming affected. Excepting the presence of the swelling, and its very rapid growth, no special symptoms existed until about a fortnight before I saw the patient, when he passed a smaller amount of urine than usual, and his left leg and foot became ædematous. following measurements, made three weeks before I saw him (for which I am indebted to his mother), at the time when I first examined him, and after he had been three weeks under my care, illustrate well the hasty strides made by the disease.

Second	measurement:	when I	first saw	him.

Round the il	22	inches.					
Immediately	$23\frac{1}{2}$,,					
,,	below the false ribs		24	,,			
,,	above the umbilious	••••••••••	24½	,•			
Third measurement: 3 weeks after the last date.							
Round the il	20	inches.					
Immediately	$25\frac{1}{2}$,,					
,,	above ,,		27	,,			

These measurements illustrate further the direction in which such tumours grow. Discovered at first in the lateral lumbar region, generally between the lower ribs and the cresta ilii and rather anteriorly, the growth increases upwards, but is most observed as it spreads downwards towards the pubes, and in front towards the umbilicus. If situated on the left side, such a tumour may, from its mode of increase, be readily mistaken for an enlarged spleen. As it grows, the abdominal wall becomes more and more stretched over it, and dilated veins ramify on its surface.

When I first saw this patient, his abdomen was greatly enlarged, and presented large superficial veins. The tumour felt uniform on the surface, and here and there it gave an impression of fluctuation. The stomach and intestines were pushed upwards and to the right side. The urine revealed nothing abnormal when examined chemically and microscopically.

The tumour increased rapidly, respiration became affected, the body wasted, and the features were pinched. Emaciation kept pace with the rapid growth of the tumour, and the patient sank gradually. He died about five months after the tumour was first detected. After great persuasion I was permitted to open the abdomen only. The viscera were found in the position above described, and all were healthy in appearance, except the left kidney. The tumour weighed 10 lbs.

The second of the cases which I saw presented the following history. A girl, sixteen months old, enjoyed good health, till one day, about four months before her death, when she was observed to

be peevish and out of sorts, and passed red and clotted blood with the urine. The hæmaturia came on suddenly, and blood was passed in large quantity. This symptom continued for a fortnight, in spite of the employment of suitable remedies. About a month later her mother noticed a swelling, of the size of an apple, on the left side of the abdomen, immediately below the ribs. The patient passed large quantities of urine, without any blood, and without pain. She became more and more emaciated, the tumour grew rapidly, but no other symptoms were present. On opening the abdomen after death, all the viscera were found to be healthy except the left kidney, which, on section, presented the appearance of encephaloid cancer. This tumour weighed 8 lbs.

The urine of this patient was from time to time examined microscopically, but no abnormal structures (pus or cancer cells) were discovered in it.

The third case referred to was a boy, who, when four months old, exhibited a swelling on the right side, just below the ribs and somewhat in front. He appeared healthy, but had been several times jaundiced. The tumour presented the same characters as in the preceding cases, and was of large size. Distinct fluctuation was felt at a point midway between the umbilicus and lower costal cartilages, where also the tumour was most prominent. The urine on examination was found to be healthy, and was secreted in normal amount. The child died, when about eight months old, in convulsions, having previously had obstinate vomiting and diarrhose. The tumour was found after death to weight 25 ounces, and the right ureter was pervious. I examined microscopically this and the tumours from the preceding two cases, and made from them the drawings in the accompanying plate.

In all these instances, the family history betrayed no tendency to a cancerous cachexia, and the other children in these households were healthy and strong.

The most important symptoms, then, observed in this class of cases are,—the presence of an abdominal tumour which increases rapidly, and hæmaturia. Among all the cases of renal cancer (primary and secondary) collected by Dr. Roberts, in forty-nine instances was the presence or absence of hæmaturia specified. "Of

these, 25 exhibited no trace of hæmaturia throughout their In 24 cases there was hæmaturia; but in entire course. 4 of these, there existed other possible causes for it than renal cancer. In three instances hæmaturia occurred only for a few weeks at the beginning of the complaint, and then altogether ceased - the urine thereafter continuing normal. In other cases hæmaturia did not appear until toward the last few months of life."* Dr. Roberts refers the presence of hæmaturia to the ureter remaining open, and the absence of this symptom to the ureter becoming occluded. Hæmaturia, especially seeing the amount of blood passed is generally small and at intervals, is I think dependent rather on an earlier or later invasion by the disease, and consequent rupture of the malpighian tufts. "In some cases the hæmorrhage is excessive, and followed by rapid anæmia and exhaustion, though this is rare: but sometimes it is insignificant. and requiring the microscope for its detection."

It is remarkable to observe how little the general health suffers in children affected with cancerous degeneration of the kidney. Extreme emaciation and impediment of the respiration, from the size of the tumour, are the only alterations to be noticed. The viscera adapt themselves to the displacement to which they are exposed. The child eats well, even ravenously; and is often very thirsty. The bowels act regularly; and the neighbouring kidney bears the burden of the urinary secretion. Death is sometimes induced suddenly, by rupture of the tumour, but most commonly the gradual exhaustion of the vital powers terminates the little patient's sufferings.

The ... ration of the disease varies greatly. Among children, "the mean duration was between seven and eight months; the minimum, was ten weeks, and the maximum, over a year.";

Diagnosis.—The real nature of the disease in such cases is often difficult to distinguish: a rapidly increasing tumour situated in the region of either kidney, especially if accompanied by profuse hæmaturia, may be generally regarded as one of a malignant nature. But the diagnosis is in such instances to be arrived at by the

^{*} Roberts. Ibid., p. 448. † Ibid., p. 444. † Ibid., p. 446.

logic of exclusion. Renal cancer has been mistaken for enlargement of the liver, spleen, ovary, or uterus; for ascites, aueurism of the aorta, or perinephritic abscess; for pyonephrosis, hydatids, cystic degeneration, hydronephrosis; and most commonly for tabes These errors arise chiefly from an imperfect knowledge of the diagnostic signs of renal cancer, from undue weight being attached to the absence of hæmaturia, and from the diagnosis being based on one symptom without reference to others, or to "As a positive sign," says Roberts, the history of the case. "associated with abdominal tumour, hæmaturia—profuse, spontaneous, and recurrent—is of the highest significance; but its absence signifies comparatively little."* Cancerous degeneration of the right kidney is distinguished from hepatic enlargement, by the possibility of tracing the upper limits of the tumour below the ribs, so as to separate it from the liver. Hepatic tumours are dull on percussion all over their surface; whereas renal tumours have the colon in front. Hepatic disease is, also, very rare in children of the tender age at which the kidneys are attacked by cancer.

"A splenic enlargement," remarks Roberts, "is distinguished by the following signs: - absence of the descending colon in front; its rigid, somewhat thin, borders (not rounded); its extension upwards under the ribs; its mobility; generally, a tympanitic note is obtained in the extreme left lumbar region; often, on deep percussion, a bowel sound is perceived through its substance, which is not thick (a renal tumour is absolutely dull on the deepest percussion); antecedent history of ague or remittent fever, or evidence of leucocythæmia on examination of the blood; the direction of the enlargement is downwards and inwards to the epigastrium and umbilicus, and not towards the iliac fossa. also rises higher toward the axilla than a renal growth. the latter rises from the upper and lower part of the kidney, and pushes forwards and upwards rather than downwards, the diagnosis becomes very difficult, and depends mainly on the absence or presence of the colon in front of the enlargement, and hints

^{*} Roberts. Ibid., p. 451.

derived from the previous history, or the state of the blood on microscopic examination."*

Ascites can resemble a renal cancerous tumour when this is very full of cysts and imparts a fluid feel; but the latter is differentiated by giving a dull note on percussion in one flank and a resonant sound in the other, whereas ascitic fluid, to the amount requisite to cause a similar abdominal swelling, would give a dull note on both sides. It is only by overlooking the history of the case, and by making a hurried, imperfect examination of the abdominal swelling, that a renal tumour can be confounded with tabes mesenterica. The source of origin of the tumour, its mode of growth, and its anatomical situation are quite sufficient (at least in the early stage of the disease) to indicate its topical character.

The malignant nature of renal tumours is, however, a matter often difficult to determine; and it is indicated alone by their rapid growth. The microscope unfortunately affords no reliable aid in the diagnosis of cancerous degeneration of the kidney. According to Walshe both kidneys may be implicated without the urine exhibiting any unhealthy characters. Cancer cells in the urine usually indicate cancerous disease of the bladder. According to Neubauer and Vogel, "when cancer-cells are found in the urine, the existence of the disease may sometimes be diagnosed by negative signs, indicating the absence of any affection of the bladder; and sometimes also by percussion, which points out enlargement of one or both kidneys."† Cancer cells in the urine are liable to resemble the irregular transitional forms of the epithelial cells lining the urinary passages, and which are so common in the urine of children. They also present very abnormal varieties, from being exposed to the action of the urine; and are associated with blood corpuscles. deposit, sometimes met with in cases of renal cancer, is "a thick, dirty, blood-stained sediment, containing abundance of blood corpuscles, mixed with spindle-shaped, oval, and irregular cells."

^{*} Roberts. *Ibid.*, pp. 452, 453. † Neubauer and Vogel. *On the Urine*. New Syden. Soc. Transla., 1863 p. 343.

54 CANCEROUS DEGENERATION OF THE KIDNEY IN CHILDREN.

Malignant renal growths generally give a distinct impression of their solid structure; while renal hydatids, purulent and hydrone-phrotic cysts betray their nature, by the history of their origin or by their fluctuating feel. Extra-renal abscess is distinguished by its fluctuating feel, by its history, often by the discoloration of the skin, by tenderness on pressure, and by its tendency to point.

Cancerous degeneration of the kidney in children, is always fatal; and the management of such cases is truly "a melancholy duty." Cure is hopeless, and remedies are used only to afford relief. The system is to be well supported, while the performance of the various functions is aided by the ordinary remedies when required. Hæmaturia rarely proves disadvantageous, and therefore requires but seldom to be checked. If it be excessive, it can be controlled by the use of ice, or the administration of acetate of lead or of Gallic acid.

ENT ADVANCES IN THE PREVENTION AND LEATMENT OF PULMONARY CONSUMPTION,

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well known that in this country consumption is the most 1 and the most fatal of all diseases. Though essentially a of debility it does not however originate so much during ble periods of life, childhood or old age, but causes the t mortality during the middle and vigorous periods of life. this we must infer that the disease is to a great extent d by conditions in our social system which admit of being ed, or removed, as we gain more exact knowledge of its

It becomes us therefore to inquire from time to time lyances we are making, and what has been or is being done, and our knowledge of the nature and causes of tubercular s, and how far such knowledge may be rendered practically le in the prevention and treatment of this insidious as well idable disease.

wattention, in my work published in 1859, to the fact that lary diseases prevailed in some districts of England to a far extent than in others; that consumption is more prevalent as than in country districts, among persons engaged in or manufacturing employments than among the agricultural ion; that, in short, pulmonary diseases, of which this is the re nearly three times as prevalent in the most unhealthy s as they are in the most healthy parts of the country. I out that the Zymotic class of diseases was not the only lich we had the power to prevent by attention to sanitary ut that the wide differences in the rate of mortality from lary diseases proved that some corresponding diminution in valence of this class of diseases might likewise be brought

about; and I gave some statistics, furnished to me by the late Dr. Duncan, which showed that the drainage and other sanitary improvements, so early instituted in Liverpool, had produced a marked diminution of the mortality from phthis in this town. Dr. Christison also drew forcible attention to these inequalities, in his Presidential Address on Public Health, delivered at the Meeting of the National Association for the promotion of Social Science, held at Edinburgh in 1863, and illustrated the fact by shewing the remarkable variations in the prevalence of consumption in different towns and districts of Scotland.

The great inequalities in the distribution of pulmonary diseases, and more particularly of phthisis, led Mr. Simon, the Medical Officer of the Privy Council, to cause several very important investigations to be made, and these form some of the most valuable contributions to our knowledge of the nature and causes of tubercular Some of the investigations could have been carried out diseases. only by one having the powers in the hands of a government officer, and they have therefore been rightly undertaken by Mr. Simon, who has thus furnished himself and the profession with a reliable basis for preventive measures, and aided us in devising means of treatment. His third Report (for 1860) contains the results of an enquiry made under his direction by Dr. Greenhow into high local death-rates from lung diseases. In this we have an extension of what was previously known, as to the injurious effects of sedentary in-door employments and deficient ventilation in developing tubercular phthisis; and also more extended information as to the hurtful effects, in causing bronchitis, of those occupations which give rise to mechanical or chemical irritation of the air-passages, by diffusing in the air of work-places any considerable amount of metallic or earthy grit, or dust of any kind, especially when those conditions are combined with abrupt changes of temperature. The facts contained in this report being only a more detailed exposition of what was previously known as to these causes, I need only here observe that their fatal power may be appreciated in comparing the small death-rate of the healthy northern standard district, which is 297 per 100,000, with the rates in some of the towns where these causes are in operationwith Stoke-upon-Trent which is 721, with Preston which is 776, and with Leeds which is no less than 817.

Villemin and others having ascertained that tubercle can be made to reproduce itself by inoculation in the lower animals, Mr. Simon caused experimental investigations to be made into this subject by Dr. Sanderson. I have never seen any reason to think that consumption is an infectious disease, though I am fully convinced that nursing and anxiety of mind are prone to induce it. In the south of Europe, however, a different opinion is entertained, and, though these elaborate investigations have not added materially to our knowledge of the nature of tubercle, they have at least to a great extent dissipated the injurious notion, as to its being an infectious or contagious product of disease.

When tubercle is inserted under the skin of guinea pigs it causes the formation of tubercle in the superficial lymphatic glands of the part, from which it extends, in the course of the lymphatic system, till the lungs and other internal organs become tubercular; and Dr. Sanderson found that the disease thus produced is an overgrowth of those structural elements which they have in common with the pulp contained in the lymphatic glands, this adenoid tissue, intimately connected with the lymphatic system, being found in all the internal organs in which tubercle is generated by inoculation.

There are two facts brought out by these researches which seem to show clearly that tubercle is not of specific nature, and not inoculable in the strict sense of the term. One is, that when animals have been inoculated with pus, and have survived the acute symptoms to which it usually gives rise, tubercles have formed, just as if tubercle had been inserted instead of pus. The other fact, which tends to show that tubercle acts merely as a mechanical irritant, is this, that the insertion of setons of unbleached cotton in the shoulders of guinea pigs produced internal tubercles. This fact seems also to have some bearing on the question, how far counter-irritation is advisable in the treatment of tubercular disease of the lungs. I have long held the opinion that it should not be used to combat the tubercular affection, but only for the complications which so often arise in the course of the

disease; that setons, which were formerly not unfrequently used, are injurious; and that blisters should not be kept open, but allowed to heal as speedily as possible.

Dr. Sanderson observes, that it still remains open to inquiry whether or not injuries which are of such a nature that air is completely excluded from contact with the injured part are capable of originating a tubercular process. My experience would tend rather to show that they are, for I have seen several cases of tubercular disease of the lungs where the deposit had taken place apparently in consequence of fracture of the clavicle, or other injury of the chest, and not far from the part injured.

Of all the facts relating to the causation of consumption which have by recent inquiries been brought to light, there are none of so much interest and practical value as those relating to the influence of drainage, and the effects of pervious and impervious soils. The effects of these agencies on cultivated plants and the domestic animals are well understood by the agriculturist, and yet we are only beginning to appreciate fully their influence on man himself.

In 1859 I published the following statistics, furnished by the late Dr. Duncan, which showed that Liverpool then presented a remarkable example of what could be effected in the reduction of consumption by means of sanitary improvements.

"Deaths from phthisis in the Borough of Liverpool:

Three years.			Deaths.		T	o F	op	ulat	ion yearly.	
1838 — 40	-	-	-	4820	-	-	-	1	in	170
1847 - 49	-	-	-	4157	-	-	-	,,	,,	252
1856 - 58	-	-	-	4571	-	-	-		•••	284"

The reduction here shown was very great, but it is now known that quite as great a diminution of consumption has been effected in many other towns by sanitary measures, and that drainage is preeminently the improvement by which it has been brought about.

Mr. Simon caused an inquiry to be made by Dr. Buchanan into the effects produced by works of sanitary improvement on the health of twenty-five large towns; and amongst other important facts elicited, perhaps the most remarkable is this, that the drying of the soil, which has in most cases accompanied the laying of main sewers, has led to more or less considerable diminution of phthisis, the reduction being in fifteen of the towns as follows:—Salisbury 49 per cent. of its previous rate, Ely 47, Rugby 43, Banbury 41, Worthing 36, Macclesfield 31, Leicester 32, Newport 32, Cheltenham 26, Bristol 22, Dover 20, Warwick 19, Croydon 17, Cardiff 17, Merthyr 11, these being the towns in which the diminution was most considerable.

The diminution of phthisis mortality constituted in some of the towns far the largest amendment; and, though surprisingly great, there is no ground to question its correctness. Mr. Simon states, that it has been found to occur as soon as the soil has been dried by main sewers, and before a corresponding diminution in diarrhosa and typhoid fever has taken place, the latter occurring only when the houses have been purified by being connected with the sewers. He likewise states, that whilst the mortality from consumption has been thus reduced, there has not been any corresponding effect on other pulmonary diseases.

We find in works on climate that atmospheric conditions warmth, and equability of temperature, have been regarded as those which are most important in determining the suitability of places for the treatment of consumption; but we have reason to think that there are other conditions which are at least as potent in their influence on this disease. The geological structure of different districts of country has a visible influence on the vegetation; and as it affects the temperature and moisture of the atmosphere, and often also the water used for drinking, it must produce important effects on the inhabitants, which have yet to be much more closely investigated. The foregoing facts, in regard to the drainage of towns, having shown the probability that the nature of the soil and other geological conditions might have an influence on the prevalence of consumption, Dr. Buchanan undertook, at the request of Mr. Simon, an elaborate investigation into the distribution of phthisis as affected by dryness or wetness of soil; and the three south-eastern counties of Surrey, Kent, and Sussex, which are of the newer geological formations, were selected for examination on account of the minute surface geology having been mapped. With full access to the Registration Returns, and having also the aid of some of those who had made the geological survey, he was enabled to open a new field of research, and to furnish the first scientific contribution to our knowledge of the influence of geological conditions on the distribution of disease. Without following him through the details of his elaborate report, which contains an examination of the distribution of phthisis, as compared with variations of the many kinds of soil in the south-eastern counties,such as clays, gravels, sands, chalks, &c., —I may observe that it shows that dampness of soil is a potent cause of phthisis; and Mr. Simon thinks that it confirms, beyond the possibility of question, the conclusion previously suggested, that dampness of soil is an important cause of phthisis to the population living upon the soil. The report shows this by the fact that there is less phthisis among populations living on pervious, than among those living on impervious soils; by the fact that there is less among populations living on high-lying pervious, than among those living on low-lying pervious soils; and by the fact that there is less among populations living on sloping impervious soils, than among those living on flat impervious soils. From this it is evident that slope and situation have considerable influence in modifying the effect of even the same soil. The main deduction from these inquiries does not rest entirely on Dr. Buchanan's researches, for it had also been noticed by Dr. Bowditch, of Boston, who had collected facts tending to show, that dampness of soil was intimately connected as cause and effect with the prevalence of consumption; and the Registrar General of Scotland has also supported it, by a comparison of the relative mortality from phthisis in eight of the principal towns in Scotland.

There is one exception to the general rule which requires to be noticed, and that is, where shingle is rendered damp by sea water. This kind of dampness does not seem to induce phthisis, and it accords with the common observation as to the beneficial effects of sea air in tubercular affections. It would be interesting, in connection with this fact, to know from reliable data if a peaty condition of soil has a like power of obviating the effects of dampness, and whether or not to this might be attributed the comparative freedom of the inhabitants of the Hebrides from consumption.

The conclusion as to the effects of dampness, Mr. Simon regards as one of the scientific certainties on which the practice of preventive medicine has to rest, and as we have few of these certainties, and as every preventive means is likewise in a measure curative, it becomes us to make use of the fact as far as possible in the treatment of consumption. We may hope, however, that as so much light has been thrown by these investigations on the causes of one disease, they will be carried out further, until we acquire a knowledge of the influence on this and other diseases of different other geological formations, such as the igneous; the older formations, such as the silurian, and the various sandstone and limestone formations. Such inquiries have already shown that the use of water impregnated with the salts from magnesian limestone, has the effect of producing goitre and cretinism.*

The practical applications of the foregoing facts in the selection of sites for houses, on porous soils or rocks, elevated or sloping, and properly drained, are so obvious, that I need not enlarge on the subject. It is most important, too, that we should inquire into these matters in sending our consumptive patients to the various health resorts, and especially to those on the Continent, where drainage has been less attended to than in this country. The Twenty-seventh Annual Report of the Registrar General has the

[•] Dr. Moffat, of Hawarden, has shown, in a paper read to the British Association, September, 1870, "On Geological Systems and Endemic Diseases," that in the district in which he practises, the prevalence of some diseases is influenced by the geological formations, which in that of Wales consist of the carboniferous and the millstone grit formations, and the new red sandstone. Ansemia, with goitre, is very common amongst the inhabitants who live on the carboniferous and millstone grit soils; but very rare amongst those who live on the Cheshire red sandstone. Phthisis he has also found more prevalent amongst the former than the latter, in the proportion of 18 per cent. to 14 per cent. The great prevalence of ansemia in the population on the carboniferous system led him to investigate the comparative amounts of oxide of iron and phosphoric acid in samples of wheat grown on soils of the red sandstone, carboniferous limestone, millstone grit, and a transition soil between red sandstone and grit. The result showed that the ash of wheat grown on the red sandstone contained a larger quantity of phosphoric acid, and a much larger quantity of oxide of iron, and he calculated that each inhabitant on the red sadstone, if he consumes a pound of wheat daily, takes in nearly four grains per day more of the oxide of iron than the inhabitant of the carboniferous system. As we have seen that the geological structure of a district of country may directly influence the amount of phthisis, by causing dampness of soil, so from these facts we are also enabled to see how other geological conditions may indirectly produce other effects through the composition of the food raised on the soil and consumed by the inhabitants.

following important remarks bearing on this matter: "Nearly all the English watering places are on good sites, and have many advantages over those abroad; and there can be no doubt that ultimately England will be the resort of foreigners who are in search of health, when we find a mortality rate per thousand, so low as 15 in the Isle Wight, 16 in Newton Abbot, including Torquay; 17 in Cheltenham; 17 in Eastburne; 18 in Worthing; 18 in Barnstaple, including Ilfracombe; 18 in Mutfort, including Lowestoft."

Hereditary predisposition has undoubtedly a great influence in producing consumption, but the more we are enabled by such investigations to see that it springs from common physical and controllable causes, the less important does hereditary tendency appear; and we must not overlook the fact that, the whole members of a family, parents and children, are often exposed to the same causes of the disease, whether industrial or endemic. The removal of the common causes must also tend ultimately to weaken and diminish hereditary predisposition to consumption and the whole tubercular class.

There have been many erroncous opinions entertained respecting consumption, both by the profession and the public. It has been thought that warmth has both a preventive and curative power, though there is no good foundation for this, beyond the fact that it often relieves cough, which is the evidence of the local disease of the lungs, the constitutional disease itself being often more benefited by the bracing influence of cold. disease was long regarded as so utterly incurable, that the advance of knowledge was hindered; tubercle, it was thought, could not be absorbed; and the light thrown by pathological facts on the curable aspect was ignored. Recent writers now, however, almost unanimously acknowledge the possibility of perfect recovery, as well as the frequent arrest of the disease, to the extent of enabling the individual to resume his occupation or ordinary mode of life for an indefinite period of years. Dr. Williams has done much by his writings, in showing what may be done to effect these objects, and he asserts that the average duration of life in phthisical patients has been extended from two years to eight.

Dr. Fuller observes that all exudations from the blood, so long as they are unorganised, admit of being absorbed; that it is a matter of experience that when tubercle is deposited in the external glands, it may remain quiescent, but more commonly undergoes gradual absorption; and that when eliminated by suppuration, the patient may live to an advanced age without recurrence of the disease. "We are thus," he says, "constrained to believe that the same holds good in respect to the lungs, and that whether tubercular deposits in these organs remain quiescent or undergo absorption, or calcareous transformation, or be got rid of by suppuration and expectoration, the patient may recover and attain to longevity, provided only that his general health can be improved, and the condition of the blood altered, so that no fresh deposit of tubercle shall occur." The same line of reasoning was adopted by me in 1859,* and inforced by a series of illustrative cases.

The deep rooted feeling on the part of the public as well as the profession in favour of change of air, as a curative power in consumption, would seem to have had its origin in a kind of instinctive appreciation of some of those local causes of the disease now fully proved to have a potent influence.

We are still, however, much in need of reliable data to enable us to judge of the salubrity of health resorts. We ought not to be guided merely by temperature and atmospheric conditions. known that in the North of Europe consumption is comparatively rare, whilst in the Southern warmer parts it is a common disease; and it is most desirable that we should have statistical facts as to the prevalence of the disease among the native inhabitants of such health resorts as Pau, Nice, Madeira, &c., which would constitute a basis for correct appreciation of their sanitary influence. the limits of our own country, we know that there is a wide difference in the prevalence of the disease, the causes of which have yet to be more minutely examined. Dr. Greenhowt selected three of the most healthy rural districts of England, to form standard districts for comparison of the mortality from different diseases in these districts, with that of other less healthy places.

^{*} An Inquiry into the Curability of Consumption, &c, 1859.

[†] Journal of the Statistical Society of London, vol. 22, 1859.

thinly peopled Northern standard district, embracing Northumberland and a portion of Cumberland, the deaths from consumption were 214 per 100,000; in the Southern standard district, embracing part of Surrey and Sussex, 250; and in the thinly peopled South-Western standard district, embracing part of Devon and Cornwall, 204. These are the districts of England in which consumption is least common; but in some parts of Scotland it would seem to be still less prevalent, and in the Western Hebrides, more particularly Lewis and Mull, it would seem, from the facts furnished by Dr. Christison, to be almost entirely unknown, except among persons who had come from the mainland, or among such of the natives as had returned after being some time resident elsewhere. Dr. Christison has also, in showing the remarkable difference in the prevalence of consumption in different districts of Scotland, pointed out that whilst the death rate from this disease is 237 for the whole country, it is only 125 for Fife, excluding two of its towns; and that for Berwickshire, which is a very healthy agricultural county, and continuous with Dr. Greenhow's standard Northern healthy districts, the rate descends as low as 104.*

The bracing influence which residence and travelling in mountain regions produces on those who live in large towns, is becoming yearly better known, through the experience of the numerous tourists who resort in increasing numbers to Alpine regions. The personal experience of many will therefore dispose them to give attention to any facts tending to show that residence in elevated places has a tonic curative influence in cases of consumption. The powerful influence of high elevation above the level of the sea in arresting the disease seems to have been early observed in South America, where the differences of climate in ascending from the sea level, and from such unhealthy towns as Lima, to the high altitudes of the Andes, are much more marked than in the Swiss Alps; and Dr. A. Smith was one of the first to draw forcible attention to the remarkable effects of certain dry elevated Andine valleys. "Incipient tubercular phthisis," he says, "usually attended with more

^{*} These rates are very low; and it may be asked if the Registration returns are made in Scotland exactly as in England.

or less hæmoptysis, is one of the most common pulmonary affecions known in Lima, and other parts of the coast of Peru. It is. pesides, a disease almost certainly curable, if taken in time, by emoving the coast patient so attacked to the open inland valley of Jauja, which runs from ten to eleven thousand feet above sea level." "The fact has been known and acted upon from time immemorial by the native inhabitants and physicians; and I have myself sent patients from the capital to Jauja, in a very advanced stage of phthisis, with open ulceration and well marked caverns in the lungs, and seen them again, after a lapse of time, return to their homes free from fever, and with every appearance of the disease being entirely arrested. But in many such instances it would, after a protracted residence on the coast, again become necessary to return to the mountains, to prevent the recurrence of the malady."* The range of temperature of this place is only from 50 to 60 F. during a whole year, with the sky always clear and sunny, and an atmosphere pure and bracing, inviting out-door exercise and enjoyment. Dr. Smith has expressed the opinion that the time is approaching when the increased facilities of travelling by steam vessels and railways will bring this and other inter-Cordillera regions of Peru into notice as health resorts. tain climates are now attracting deserved attention, and Dr. Weber,† in a valuable paper has given the results of his experience in seventeen cases, which have been under his observation for very considerable periods. His experience certainly shows that mountain climates are beneficial, in some forms at least of the disease, but it is very desirable that further facts should be accumulated, not only as to the general question, but also as to the influence of particular elevated stations, both abroad and in this country too; for in proportion as any country is further removed from the equator, a less degree of elevation is necessary to produce an influence on the disease. Weber believes that, before long, it will be counted among the errors of the past, that cold is injurious to those predisposed or in an early stage of consumption, and that climates of a uniformly

^{*} Dublin Quarterly Journal, vol. 41, 1866.

[†] Medico-Chrurgical Transactions, vol. 52, 1869.

warm temperature are the best. This is no doubt to a certain extent true, for we find many patients get on well during dry cold frosty weather in winter, who sink under the heat of summer. All are not however alike, and practically we meet with others who cannot resist cold; and the warm equable temperature of the Nile, has proved beneficial to some who might have been unable to bear up against bracing Alpine cold. The evidence, however, in regard to elevation, is such as to show that it undoubtedly has something in it of a preventive and curative nature; and how mountain climates act is an interesting subject for inquiry, whether by the rarefaction of the air, its greater coolness and lightness, its freedom from admixture of germs and foreign particles, or by the diminished amount of oxygen, and increased quantity of ozone. These must all have an influence, and we know that the rarefaction of the air must render the respiratory movements and action of the lungs more intense.

As the same causes which produce tubercular consumption must also operate to a greater or less degree in the production of the whole tubercular class, -embracing not only phthisis, but also scrofula, tabes mesenterica, and hydrocephalus, -all advances in our knowledge which tend to the prevention, or improve our means of treating the first, must also have an extended influence on the whole class. Now as our knowledge of the causes of these diseases, and more particularly of consumption, has been extended, as our treatment has improved, and as important sanitary measures have been carried out in the large towns, we would inquire if any progressive diminution in the mortality has taken place. Twenty-seventh Report of the Registrar General enables us to reply to this question; and shows that there has been a diminution in the mortality from tubercular diseases, and still more in the mortality from phthisis. In comparing three periods, each of five years, we find that the proportion of deaths from tubercular diseases to a million of the population for the period from 1850-54 was 3655, from 1855-59 it was 3448, and from 1860-64 it was 3367. Again comparing in the same way the proportion of deaths from phthisis, we find that for the five years from 1850-54 it was 2811, for the period from 1855-59 it was 2647, and for

the period from 1860-64 it was 2566. If we had later returns* they would probably show still further diminution, and it is satisfactory for us to know that we have the power to limit, and in some measure control, the ravages of these diseases, these statistics proving that there is already a considerable diminution in the prevalence of consumption.

TREATMENT.

The limits of this paper prevent me entering at length into the extensive subject of the treatment of consumption and its varied complications, and I shall therefore in this place only touch briefly on a few important points. When the disease manifests itself by local physical signs, as well as by cough and general symptoms, we have two indications to carry out, one of which is to improve the general health, and to remove as far as possible the morbid constitutional state which has produced and is still adding to the local affection of the lungs; and the other, which is the minor, but still an important indication, is to relieve cough, pain, and other local symptoms, and to remove complications. embraces not only the removal as far as possible of any known cause of the disease still in operation, and the adoption of hygienic rules in regard to diet, exercise, ventilation, clothing, mental occupation, and such change of air or climate as may be suitable for the individual case; but also, such medicinal treatment as is calculated to remove any disorder of the digestive organs and invigorate the nutritive functions. Cod liver oil has now for many years held the first place as a medicinal or nutritive agent, capable of effecting this latter indication, and it has unquestionably a greater power of controlling tubercular diseases than any other known remedy. have elsewhere observed that judgement and skill must be shown by the physician in seeking out and removing opposing complications, which interfere with its successful employment. It is too often hastily abandoned because it does not at once agree, or seem to agree, with the patient; and its beneficial effects are often lost.

The Thirty-first Annual Report of the Registrar General, just issued, shows for 1868 still lower rates — that of tubercular diseases being 8,181, and that of phthisis 2,395.

majority of cases, it will be found tha floating on the surface of an acid tonic bitter by gentian or some other vegetabl

The acids with which I have generally nitro-muriatic, the phosphoric, the lac have also sometimes given the sulphuric and has a greater power of checking per that hydrochloric acid assists the soluti the stomach, and with this view I have g after a meal. It is thought that lactic and perchloric may, in addition, have cating oxygen. The preparations of iron hold the place in my estimation next to bitter tonic. The tincture of the p of the phosphate with phosphoric acid, are may be used alternately with a niti each being given with the oil for period and they are more particularly indicate anæmia is a prominent symptom. bearing on the treatment of local sym deposit in the lungs, embraces the mea relief of cough, spitting of blood, and

Quantities of chloroform, from twenty to thirty minims, on a handterchief. Such remedies often aid us indirectly, in bringing about
he arrest or suspension of the disease, though they cannot be said
have any of the curative influence over the disease which we
wild claim for climatic influences and cod liver oil. Recently
re has been brought to light a new remedial agent, hydrate of
loral, which has often a better effect than either morphia or
loral, which has often a better effect than either morphia or
lum, in relieving cough and nervous irritability, and especially in
coducing sleep. It constitutes a most valuable addition to the
medial agents we possess for the treatment of many diseases,
and I have found it of great service in some cases of consumption.

The chief value of chloral consists in its power of inducing sleep, when given in doses of from a scruple to half a dram and upwards; and the medical journals have, since the beginning of this year, been filled with cases illustrating its beneficial effects in the extensive class of nervous diseases. In most of those where sleep-lessness is a prominent, or distressing symptom, and generally when want of sleep tends to aggravate any other disease, hydrate of chloral is a safe remedy and more certain in inducing sleep than opium or morphia. It has this advantage also over these remedies, that it does not produce headache, constipation, or other injurious effects afterwards. In this freedom from injurious consequences it resembles bromide of potassium, but it is more speedy, certain, and powerful than this very useful remedy.

In many cardiac and pulmonary affections, accompanied with spasmodic difficulty of breathing, I have found chloral very useful; and though it is less efficacious than the preparations of opium in relieving pain, I have often found that in small doses, of about ten grains at intervals, it relieved cough and pulmonary irritation. In cases of consumption I sometimes give it for this purpose; but I have found it most serviceable in those cases where there was general nervous irritability, producing restlessness and want of sleep, which aggravates all the symptoms, and, in the advanced stages, wears out the strength of the patient. In some of these cases it produces sound pleasant sleep, without any subsequent disagreeable effect, but, on the contrary, revives the patient's strength; and in comparative trials with morphia and opium, I have

in some instances found the patient give chloral a decided preference. It has seemed too in some cases, though not always, to have some power in checking perspiration, hæmoptysis, and bronchial secretion; and this might be so if it produces, as has been asserted, a contractile action on the capillary vessels.

DETACHED NOTES ON ECZEMA.

By EDGAR A. BROWNE,

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he progress of medicine is undoubtedly much retarded by the lency even of trained observers to select one of two sides in ested questions, and to employ themselves rather as advocates as indges, so that views which contain no more than the unt of truth necessary to make them plausible come to be ed in argument as free, or almost free, from error, and even, in inthusiasm of proselytism, to be caricatured. And as it is 3 natural for men to believe than to doubt, to contradict than ∋igh and consider, to dispute than to painfully observe, it comes ass that the majority range themselves under some chosen er, and see as he sees, think as he thinks, and teach as he bes, ignoring meanwhile everything, except the weak points, ae doctrine of opposing schools. By this means much excelability for observation is warped or destroyed, and a vast unt of energy wasted in maintaining windy controversies, over prences which are frequently of no greater importance than ie "betwixt tweedledum and tweedledee."

the present time, it must be familiar, even to those not ially engaged in dermatology, that a curious controversy is g waged respecting the limits and significance of the term ma. One party, composed of the followers of the great a, contend that, on the evidence afforded by the natural history decisease and by experiment, a whole group of affections to carefully differentiated must be regarded as simply varieties. Eczema—and, as a corollary, that it cannot be regarded sentially vesicular in its nature, inasmuch as examples wible under the old classification to the papular, pustular squamous groups must be admitted. The opposing school.

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founded upon the teaching of Willan, denies the value of the evidence afforded by experiment and the alleged significance of many of the natural phenomena, refuses to recognize the so-called varieties, and maintains the pathological importance of the vesicle. In point of numbers the latter party is inferior to the former, and labours under the disadvantage of maintaining a conservative view. and of being supposed to be identified with a scheme of classification no longer defensible. It is almost, if not quite, extinct in Germany; represented by a few distinguished men in France; and in this country is attacked with merciless severity and persistency by the representatives of the modern school. Indeed those who endeavour to prove that Eczema is not essentially a vesicular disease appear to me to fall into the error of protesting too much and too directly against the teaching of Willan. Books have been written, articles penned and lectures delivered, all pervaded with the intent of destroying a clinical offender, who has been dubbed, somewhat scornfully, a "Willanist." But, after perusing many of these writings with attention, I have come to the conclusion that the Willanist attacked is no more than a man of straw, stuck up on purpose to be knocked over. He is often presented in the most ridiculous lights. For instance, our pity and mirth are alike moved. by learning that "when a Willanist, deeply imbued with the belief that Eczema must exhibit vesicles, has a case under his notice, it is quite painful to observe how he strains his eves in quest of them, when perhaps none are to be found; or how pleased he is if, on a surface, which, we shall say is covered with innumerable papules, one small vesicle is at last detected. or even a papule translucent on its summit, so as to give it the air of a vesicle!" Certainly a most misguided man; for. note how he seems to make his diagnosis first and then to search for his favourite lesion; a mode of procedure. I admit. sufficient to justify all the scorn that can be heaped upon it. But does he exist? Did he ever exist, except in the imagination of the brilliant writer from whom I have borrowed the quotation? I believe not. I doubt if there is a line, in any Willanist writer of repute, teaching that there is a hard and fast line set between the limits of the eight orders. Willan himself, though the formulator

of an artificial system of classification, was well acquainted with the natural history of Eczema;* and the actual teaching of the "Willanists" is nearly the reverse of what is often cited. They do not say, "Where Eczema is, vesicles must be;" but rather, "Where there are vesicles of a particular description, the disease is Eczema;" and this, I take it, cannot be gainsaid.

But vesicles may potentially exist, and, though invisible to the unassisted eye, may be demonstrated by a simple process introduced as a mode of treatment by Hebra. One description of Eczema is characterised by a smooth, brightly shining, tightly stretched epidermis; there is no oozing, no sign of vesicles, no sign of unequal distribution of the infiltration.

These patches are generally small, situated most frequently on the anterior surface of the leg, not symmetrical, nor dependent upon any ascertainable internal condition for causation, and therefore for the most part susceptible of cure by local treatment alone. The course of the disease is extremely chronic, and recovery, even under vigorous and carefully applied remedies, difficult to promote. If now a patch of this nature be energetically rubbed with a strong solution of caustic potash, or soft soap, it is affected in a peculiar The surface, originally smooth, glistening, and dry, manner. becomes moist and whitened, thickly dotted with livid red points, from which serum is freely poured. These are the cavities of vesicles from which the rubbing has torn the softened epidermic covering. From the outside they were not recognizable. cuticle was too tightly stretched to be raised by the infiltration into the little domed roofs characteristic of vesicles, but maintained a flat level surface, and effectively counteracted the force of the infiltration. But at these points the epidermis was separated from its bed, (or rather, as the epidermis never shifted, we may say the bed separated from it,) and the action of the potash has been to soften it, so that it is easily removed by the rubbing where it has already separated; for observe, in the intervesicular spaces it is not removed, and no such effect follows the application to healthy skin.

[•] For an account of the opinions of Willan, see the admirable Lettsomian Lectures for the current year, by Dr. Tilbury Fox.

But the difficulty of the problem is increased when we come to consider the relations of the vesicle and the papule; and on this point the modern school declares itself rigidly opposed to the teaching of Willan. No one can have failed to have observed that a typical patch of Eczema is often surrounded by a margin of hyperæmie skin, studded not with vesicles, but with papules; and as the Eczema spreads, this tract becomes, like the central portion, vesicular, and papules are no longer to be seen. It is also easily noted that a patient's skin may present the appearances typical of Eczems in one place, in others only a papular eruption; and that, by the action of a slight irritant to the skin, a papular eruption may be produced, which by a prolonged application may become vesicular. The frequency with which this papular eruption occurs, in cases which present all the admitted marks of Eczema, has seemed to some writers to afford ground for describing a papular variety of Eczema, and for suggesting that if the name Lichen be retained, it is to be understood to signify a papular form of Eczema. Now it must be conceded that much that was formerly described as Lichen was in reality a papular eruption of eczematous nature, and the term was (by an imperfection inherent in the anatomical classification) for the most part wrongly applied to it as a separate disease, but it cannot be so readily conceded that a separate variety—Eczema papulatum—is proved to exist.

If we watch a series of cases (one or two will scarcely serve our purpose, as disease deals largely in ellipsis), we find that the typical course of Eczema may be divided into stages, of (1) Erythema; (2) Papulation; (3) Vesiculation (with its concomitants of surface-weeping and crust-formation); and (4) Desquamation; and we note that it is possible for the disease to be arrested at any stage, without proceeding to its usual successor, and that the stages of papulation or vesiculation may be apparently or actually omitted. If we carefully examine the papules, we find that they either form rapidly, or become vesicles (or suppurate), or are reabsorbed, leaving only a slight desquamation as evidence of their former existence. They constitute, in short, as Hebra has shown, a necessary stage in the generation of the vesicle, being in fact the swellen epithelial cells lining the follicle, the exudation not being as

ret sufficient to thrust the non-absorbent epidermic layer upwards rom its attachment.* If the exudation is poured slowly out, he papule is easily recognised, and if by any cause its further secretion is arrested, the attack terminates without the formation of a typical vesicle; but if the process is rapid, the vesicle appears to spring into existence almost at once, and the preliminary stage at all events not easy to observe.

It is by the use of the word papule, that much confusion has arisen, inasmuch as an affection exists apparently quite distinct from Eczema, in which papules form the prominent lesion. This is correctly termed Lichen. The papules (unlike those of Eczema) shew no tendency to be reabsorbed, to pass on to the stage of vesicles, or to suppurate—they are, compared with the temporary condition of Eczema-papules, in a manner, permanent formations. The disease is in other essential and clinical characters so different from Eczema, that Hebra and his disciples must be considered to have conferred a decided gain on dermatology, in enabling us to distinguish between the two affections, which were certainly confounded under the older system.

It sometimes happens that the inflammation constituting Eczema is so deliberate in its character, that the distribution of the infiltration is not particularly determined by the configuration of the skin; that neither visible papules nor vesicles are formed, and the eruption remains in a dry form, from onset to outset, and is characterised simply by a condition of hyperæmia and desquamation. This is, again, a form of Eczema short of its full development, and no variety. It is determined by the pace of the diseased action, and occurs in some cases where the typical climax is never reached, in others on their decline after it is passed. A case admirably illustrating this point occurred some time since in my dispensary practice. A middleaged woman, who had suffered from several previous attacks, was admitted for a dry desquamating Eczema, involving the legs, thighs, and some portions of the trunk. The eruption was throughout dry, and was never observed by myself or the patient to

^{*} See Hebra, New Sydenham Society's Translations, vol. i., p. 7.

weep anywhere, though on previous occasions the symptom had been well marked. I had determined to attempt the cure with arsenic, employing merely palliative applications externally; but during my absence from home, a friend, in charge of my cases, proceeding according to the orthodox rule, applied the tar oint-The application at once caused considerable irritation, but the patient, under the impression that it was "drawing the scurvy out," persevered for two or three days, till the intolerable pain forced her to desist. I saw her on her next attendance at the dispensary, the eruption presenting a fiery-red, raw, weeping surface, everywhere spreading rapidly at its periphery, being, in short, a typical case of acute Eczema. Under expectant and soothing treatment, it subsided in the course of a few weeks into its former chronic, dull-red, dry, scaly condition, and after a length of time was entirely cured. If the stages in this case had only been seen on the skin of separate patients, we might have supposed it possible to look upon them as varieties; but occurring as they did, they afford experimental evidence that the typical vesicular and dry forms are producible simply by different rates of progress. We never speak of degrees of inflammation occurring in other organs of the body as varieties of disease, even though the symptoms (as in the stages of pneumonia) materially differ; and it appears to me both illogical and incorrect to do so in the case of the skin. it has been done, and by men of distinguished ability, illustrates the danger of a symptomalogical study of disease, unaided by reference to a broad philosophical pathology.

If now we can regard Eczema as an inflammatory disorder, modified in its symptoms and effects by the circumstances of its situation, and by its rate of progress, any satisfactory attempt we investigate its causes must be coextensive with the investigation of the causes of inflammation, and beyond the region of specialism. The problem for the dermatologist to determine is, why (in the cases which come under his notice) the inflammation occurs by preference in the skin; and here, it must be confessed, our knowledge is singularly unsatisfactory. Putting aside for the moment the causes ordinarily enumerated, observation teaches us that certain subjects who manifest no particular tendency towards

ther diseases, who are in the ordinary sense of the word healthy, re especially liable to particular skin diseases, of which Eczema is It is probably true that all disease (not obviously traumatic) s more distinctly determined by causes within, than by causes without the body: that we must look to diathesis to explain the multiple effects which follow a limited number of outside causes. Certain skin-diseases, -notably eczema, psoriasis, lichen, -seem to depend upon a special disposition of the system frequently complicated and obscured, but occasionally sufficiently marked and isolated. By the French dermatologists, this important principle has (with others of questionable truth) been long recognized, and the terms "dartre" and "dartrous diathesis" used to meet its requirement. But in this country, the grounds upon which the class is founded have been only imperfectly recognized, and much ridicule has been expended on the terms themselves; they are said to be only "cloaks to cover our ignorance," and have, by almost common consent, fallen into desuetude. But though, like all short terms which attempt a wide range, liable to much abuse, they serve a purpose which can only be fulfilled by periphresis. If we give them a definite meaning, and no more, they are really aids to knowledge, even, though it may be (as in this case) no more than skin-deep. When we say a patient is scrofulous, we know well enough what we mean, though we know next to nothing (except objective signs) of scrofula; when we say a patient is tubercular, we know well enough what we mean, though we know next to nothing (except objective signs) of tuberculosis; and when we speak of a patient as dartrous, we may convey a definite meaning. though we know next to nothing (again except objective signs) of dartre.

The marks of this condition are, a special liability to certain symmetrical, recurring and generally chronic diseases of the skin, affecting healthy persons, or alternating with certain similar affections of the mucous membranes, e. g. bronchitis, gastric catarrh, &c., &c.; in general terms, a system unable to maintain a due balance of nutrition at its periphery. It is the more necessary to recognize frankly this condition, as determining disease from within; as the dyspepsia which is probably dependent upon the

induced state of the mucous membrane is frequently spoken of as a cause of Eczema. I am convinced that both are in the first instance alike effects, and both are generally amenable to the same simple internal treatment. What may be the essential nature of this condition is wrapped in obscurity. Certainly not a blood-poison, or materies-morbi, to be eliminated; possibly some defect in the production of trophic nerve action, as it is certainly removed by nervine remedies, and scarcely affected by others.

The question whether syphilis is ever a cause of Eczema is one of extreme importance. In the whole range of medicine, putting aside questions of life and death, there is nothing carries with it more certain misery or happiness than the decision whether \$ disease be or be not syphilitic in its origin. In the days when a copper colour and a history, or the copper colour and a suspicion, were enough to determine an eruption as syphilitic; when "secondaries" included all eruptions from the earliest to the latest; when considerable laxity in the diagnosis even of the initial lesion prevailed, it was only natural that a great variety of skin diseases should be supposed to depend upon that unknown quantity, "the But now, when greater exactitude prevails, and the danger of including with syphilis those diseases which only resemble it in the mode of contagion, has become reduced to a minimum, the cases of syphilitic Eczema become rarer and rarer. I have in vain searched for an example, and failed to find one which will bear close examination. So far as a negative can be asserted, I should be disposed to assert that a syphilitic Eczema does not exist. It is something in favour of this view that well noted cases of syphilis watched throughout their course have never shown any tendency toward the production of Eczema; and it is something, also, that those few cases in which a history of syphilis and an Eczema co-existed, and the two seemed causally related, afforded also a history of attacks of Eczema prior to the acquisition of syphilis. I was at one time disposed to consider certain cases of Eczema occurring in syphilitic children as forming curious exceptions to this rule, but I am now persuaded to the contrary. Eczema does undoubtedly occur in the victims of congenital syphilis with sufficient frequency to warrant the suspicion

he one depended upon the other; and the well known modifiis imposed on syphilis, by its implantation in the rapidly ing tissues of infants, might conduce to the idea that the skin t be somewhat exceptionally affected by the disease incurred the beginning of extra-uterine life. But a careful examinaof syphilitic infants revealed the fact that the eczematous ion was only an indirect effect of the main disease. tile syphilis a notable amount of diseased action takes place in nucous membrane, especially at the nose and anus. rise to a quantity of discharge which, if not irritating when ted, speedily becomes so; and even when the greatest care is , a certain amount falls upon the skin. Now though syphilis rise to definite diseased actions in the skin (of which, let us the eczematous is not one), it does not confer immunity from ffects of other influences to which the skin may be subject. harides will produce a bleb, croton oil pustules, the actual ry an eschar, equally upon the skin of a healthy or syphilitic ct; and so an acrid, irritating discharge (whether directly nating from syphilis or not) will produce Eczema in skins a are capable of taking on that action, uninfluenced by the nce or absence of the specific malady. In this way clinical vation leads me to suppose Eczema is often generated in One method of ts, the subjects of congenital syphilis. nosis requires a word. It is often assumed that, in doubtful , if the exhibition of mercury does good, the disease must be This most erroneous deduction illustrates admirably a theory domineers over observation. No great number of has passed since mercury was esteemed one of the best dies for inflammation; but, that belief having almost passed the limbo of forgotten faiths, it is now supposed that, because ury is something like a specific for syphilis, that any eruption fited by mercury must be syphilitic. The argument looks iently ridiculous when reduced to words, but is frequently with in practice. As a matter of fact, so far from mercury beneficial only in syphilitic diseases of the skin, there seems in to suppose that in small doses it has a tonic action—not ce that of small doses of arsenic—and, except in those

singular cases characterised by complete intolerance of the drug, it acts beneficially upon atonic inflammations, apparently without reference to their remote cause. Whatever be the theoretical explanation, its practical value in the eczema of young children is considerable, and consequently it cannot be relied upon as an aid to diagnosis.

From what has been said, it will be perceived that Eczema may be regarded as an inflammation of the skin, having its origin in such causes as ordinarily give rise to inflammation, or depending for existence mainly on a constitutional peculiarity, of which the precise nature has not been determined. The treatment must be varied according as an Eczema belongs to one or other of these classes. For the former, a purely local medication will often suffice, for the latter a combined general and topical treatment is generally to be preferred.

As an internal medicine, no drug has so popular or well deserved reputation as arsenic. In properly selected cases, it will frequently effect a cure without any local treatment (worthy of the name) It, however, effects its object less slowly than being adopted. when combined with suitable external applications; and it should therefore never, if possible, be our sole resource. In our present ignorance of all that concerns the action of drugs, it is not possible to offer any explanation of its modus operandi. Dr. Hughlings Jackson, having especial regard to its action in neuroses, has hazarded the suggestion that it supplies the place of phosphorus in the nerve substance, and may be regarded as the vicar of that element in the body. The hypothesis, though quite in accordance with the observed effects of arsenic, and with much probability in its favour, is incapable of serious proof. That its primary action is on the nervous system is indicated by its power in controlling purely functional nerve disorders, and especially those diseases characterised by a chronic disturbance in the capillary circulation, or want of tone in the vaso-motor nerves.

Practically it must be regarded as one of our best tonics, and I cannot understand upon what grounds Dr. Bence Jones has classed it with lead and antimony as retarding nutrition. Under its use, patients sensibly improve in muscular strength, are freed from

pains, and gain flesh. It may be given for a great length of time in chronic cases, such as lupus in young persons, without in the least interfering with the growth natural to the time of life. Its special value in chronic skin diseases is, that, though a tonic and antiperiodic, much resembling, and scarcely if at all inferior, to quinine, it can be given for a great length of time without locking up the liver, constipating the bowels, or disturbing the head; and, being destitute of taste, the constant repetition of the dose gives rise to no disgust—a point of some importance in the treatment of a chronic ailment.* It has, beyond any remedy yet investigated, a powerful effect upon the peripheral nutrition of the body. As its action becomes manifest, the tongue is covered with a fine silvery layer of epithelium, the conjunctiva becomes irritable and "gritty;" and if the dose be unmodified a huskiness of voice, and a tickling cough, cause the patient to complain he has "caught cold." Discontinue or lessen the amount and the cold disappears, from which it may be inferred that an effect has been induced in the air-passages similar to that visible upon the tongue. In like manner, if the strict limit of its beneficial action be exceeded, the surface-nutrition of the gastrointestinal tract is disturbed, and gastrodynia, dyspepsia, nausea, and diarrheea warn us to reduce the dose. On the skin, two distinct effects are produced in a limited number of cases:—1. It becomes slightly darker in tint than usual, and loses its natural gloss, looking somewhat as if lycopodium or powdered resin had been rubbed over it; in other words, a fine desquamation occurs, but very rarely, in comparison with the frequency with which the corresponding effect takes place in the mucous membrane. In some persons—I have observed it lately in three, two males and one female, all fair complexioned—an urticated lichen appears suddenly, scattered more or less over the whole body. especially severe on the arms. By the lower orders this symptom is, despite its intolerable itching, highly valued, as a proof that the medicine is driving the disease out of the system.

^{*} Fowler's solution should be made as suggested by Mr. Wilson, without the compound tineture of lavender.

It can almost invariably be relied upon in cases where the eruption is symmetrical, chronic, recurrent, and when associated with chronic bronchitis, chronic rheumatism, catarrhal dyspepsia, leucorrhæa, menorrhagia. Should the complications of gout, or the systemic depravity induced by syphilis or struma exist, it is still useful, but is scarcely to be administered without suitable adjuvants. In the local eruptions, and those dependent upon eccentric causes, it is comparatively useless. I care very little in what form I give it, and do not agree with an opinion lately expressed, that in combination with iron it is comparatively inert. It would be interesting to ascertain how far this idea is due to clinical observation, and how far to the belief in the antidotal nature of the two substances. Children of two or three months old almost invariably derive great advantage from its use; but, in cases of Eczema attacking old people, I believe it to be inferior to strychnine. Iron, and bichloride of mercury, though useful remedies, follow at such an immeasurable distance that their claims are not worth a lengthened discussion: the one must be given in exceedingly large, the other in small doses, and both continued for a long time. Complications must of course be treated on general principles; but one fact is worth noting, that though often merely coincidences and in nowise causative, they will effectually hinder the cure of the Eczema. Of these, heart-disease, chronic-alcoholism, constipation, and varicose veins are, besides constitutional states, the most important.

Passing over merely palliative measures, the external treatment of Eczema is to be conducted on two main principles, (1) to relieve the over-loaded skin of its infiltration, and (2) to restore to the distended and paralyzed capillaries their functional activity.

The first object may be attained by the constant application of soft-water, thin gruel, weak alkaline lotions, and so forth, but more effectually by the use of soaps. Of these the weakest, an emulsion of borax with olive oil diluted with water, or carron oil, will be found valuable, especially in the case of children. Next in degree comes a solution of soft soap, dissolved, with the aid of spirit, in a suitable quantity of water, and applied constantly by a compress or on lint. In the more rebellious cases, the soft soap

self, rubbed vigorously in with plenty of hot water, is most effecial. As the application is painful, it should be made as seldom as
ossible, once in twenty-four hours will generally suffice, and the
intervals be covered with carron oil, or
ome bland ointment. For old, indurated patches, nothing has
ielded such good results in my hands as free and severe blistering,
itending for some distance over the sound skin, and then
neouraging the discharge by the weak solution of soap.

This being accomplished, or not being necessary, a bland ointaent is to be applied. Out of the multitude three may be selected— Wilson's benzoated oxide of zinc, the old ammonio-chloride of nercury, and Hebra's litharge ointment. To any of these may dded with advantage, a small proportion of carbolic acid. Like Il the preparations of tar, it must be used in small quantities. with caution, as it sometimes causes great irritation. najority of cases it is a good anti-pruritic, and hardens the newly formed epidermis. In many cases the cure is speedily and pleasantly accomplished by this means alone, but some cases equire more vigorous applications. As a general rule, no stimuant is so useful as tar. The pharmacopæia unquentum picis iquidæ, diluted or not according to necessity, is the most generally iseful application, but a similar proportion of oleum cadini is ather less disagreeable. In my hands no remedies have proved qually efficacious.

Pressure is of great importance; no one would think of negecting it in cases complicated with varicose veins, but it is not so often employed in uncomplicated cases as it might be. A useful nethod is to paint the patch freely with Richardson's styptic colloid—allowed to evaporate to half its bulk before being used—allowing the film to dry and contract, covering it with a sheet of hin vulcanized india-rubber and bandaging. By this means pressure is applied and supported, while the atmosphere is excluded. Many other remedies may be enumerated, but the above nave seemed to me to be the most generally useful; with less simplicity we may have less success. But it is only by patience and diligent removal of complications that satisfactory results are attained in actual practice; unfortunately, no general rules can be

laid down to meet what are often the greatest difficulties. Nevertheless, it may fairly be said that the majority of cases do yield to treatment intelligently carried out, on the principles indicated above; and whether this, that, or the other ointment or lotion is selected to compass the end is comparatively unimportant.

N FRACTURED RIBS IN INSANE PATIENTS.

By T. L. ROGERS, M.D.,
MEDICAL SUPERINTENDENT BAINHILL COUNTY ASYLUM.

WITH

REPORT AND ANALYSIS.

By J. C. BROWN, D. Sc., (LOND.)

ON CHEMISTRY AND TOXICOLOGY AT THE LIVERPOOL ROYAL INFIRMARY SCHOOL OF MEDICINE.

occurrence of fractures of the ribs among the patients in our 2 Asylums, often only discovered after death, has lately d a large share of public attention.

Poose giving the details of a few cases that have come under

pose giving the details of a few cases that have come under observation.

L., aged 53, admitted into the Rainhill Asylum January 1869, affected with Melancholia, had refused his food s to admission, and was in a very weak and attenuated on.

s certified on order of admission:

on admission (to the Workhouse), a week ago, he was very shouting, and making a peculiar moaning noise, kicking owing his arms wildly about. Endeavoured constantly to to strike at those in attendance upon him. Since admishas grown much quieter, will sit for hours together not g a word; in fact, seems to be in a state of Dementia, and approaching Idiocy. At times refuses his food. Upon on it was necessary to restrain him; any excitement would y soon make him violent."

nad been a patient in the Asylum from April, 1867, to y, 1868, and had then been confined to his bed for several with Broncho-Pneumonia, from which he ultimately recoand was discharged from the Asylum as cured.

nis re-admission, there was some amount of dulness over

..... OI DITO DOU

he shrank from any examination.

He gradually declined in health more profound; he persistently refed regularly with the stomach-pu sometimes resisted. After lingerin greater part of which he spent in bed

greater part of which he spent in bed

The autopsy was made on the fe
were found infiltrated with tubercle,
apex of the right. It was also ascer
left side, and the 5th and 6th on
fractured. The fractures appeared to
from the extent to which reparation
surfaces were generally adherent, bu
effused. The ribs themselves (whole
found to be exceedingly soft, so were
and a half inch long, not denuded of

At the inquest, the question of courinjuries sustained?

Although reported as being very admission, he had for the most part be the Asylum, with the exception of his use of the stomach

broken between the finger and thumb

he fractures had occurred before the patient was admitted into Asylum, and that the others had been caused by the patient's ing, or possibly by holding him whilst the stomach-pump was ng used.

The occurrence of this case determined me to pay particular ention to the state of the ribs, in all cases that died in the ylum; a determination which was strengthened by the untunate succession of cases of extensive fractures of the ribs that urred shortly afterwards, at some other County Asylums.

In two cases, traces of injuries had been discovered which had been anticipated.

D. D., aged 35, admitted April 28th, 1868, suffering from lancholia. Certificate stating that "he is incoherent and cond in his language; says he cannot sleep for noises and fusion in his head, and that he is very low in his spirits. Is n violent, destructive and dangerous; strikes those around him, tears his bedding." Symptoms of general paralysis submently developed themselves, and he gradually sank into a dition of Dementia, and died of Colliquative Diarrhœa on uary 27th, 1870.

at the autopsy, it was discovered that he had at some remote iod sustained a fracture of four ribs on the right side and two the left, all at the angles, the fractures having united by firm yous union, with an organised adhesion between the two layers oleura at a single spot only.

There was a small cavity at the apex of the right lung, and ercle scattered through its substance.

The ribs themselves were much thinner and slighter than usual, embling those of a female. Ne alteration was apparent in their sistence, but unfortunately none were reserved for more careful mination.

!hese injuries had probably occurred before the patient's nission into the Asylum.

n the second case, the patient, John Smith, a foreign sailor, d 39, was admitted December 15th, 1868, affected with Mania General Paralysis. The certificate states that "patient is a ade, appears sullen, and unmoved by what is going on. States

that he hears 'all sorts of noises at night'—music and drums—which is a delusion. He will not stop in bed at night; talks a good deal to himself, and says that he is going to Glasgow."

He was in weak bodily health, and had an un-united fracture of the left ulna.

He improved in health and mental condition for the first three months. He subsequently became very restless, excited, and destructive, especially in the night. For several weeks before his death he occupied a padded room, with a mattrass on the floor.

He died of Colliquative Diarrhea, January 28th, 1870.

An examination of the body showed that the ribs, from the 4th to the 10th inclusive, on the left side, had been fractured in a straight line downwards, and about two inches from the cartilages. Of these, the three upper ones and the 10th had united by firm bony union, which was so complete in the 4th and 5th that the original fracture could only just be traced; the 7th, 8th, and 9th were un-united, and the two latter had a second fracture about three inches from the first.

There was no trace of pleurisy or of pleural adhesions.

In this case the direct line of the fractures seemed to indicate that the seven ribs had all been broken at the same time, and the perfect osseous union of the upper ones shewed that the injury had occurred long before; but it is not so clear why they should not all have united equally well. The un-united fracture of the ulna helps to explain the anomaly.

The second fractures were probably of a more recent date.

These ribs were all removed without interfering with the fractured portions, and were sent to the Liverpool School of Medicine, and are described as No. 1 in Dr. Brown's report of the analysis. The opinion of the Lecturers on Surgery and Anatomy at the Medical School was, that, "provided the course of nature had not been interfered with, the un-united fractures had probably occurred about two months before."

Considering, however, the almost incessant restlessness of the patient, I should say the natural course of recovery had been very seriously interfered with.

About this time Dr. Clouston of Carlisle, and others, called

attention in the Medical Journals to the altered condition of the ribs in cases of General Paralysis, and as it seemed desirable to submit them to a more rigorous test than a mere tactile examination, Dr. Campbell Brown, of the Liverpool Medical School, kindly undertook to make an analysis of them, and his report is herewith annexed.

As there was no patient affected with Paralysis whose death was imminent at that time in Rainhill, I procured specimens from other Asylums.

- No. 2.—These bones were obtained from the body of a patient, aged 33, who was admitted into the Prestwich Asylum, suffering from Mania, with General Paralysis.
- No. 8.—Is a rib taken from the body of a woman, aged 40, the subject of General Paralysis, who had been an inmate of the West Riding Asylum three years, and died in May, 1870.

REPORT and ANALYSIS by Dr. J. C. Brown.

- "Several specimens of ribs of General Paralytics have been sent to this laboratory; and the general appearance of all of them is so unlike that of the ribs of healthy adults, that I have been induced to make careful analyses of some average samples.
- "In the accompanying table, the first four columns of figures show the composition of these samples:—
- "I. Consisted of six ribs, which had all been fractured, and had completely united; and showed a slight callosity; some of them had been again fractured more recently, and had only imperfectly united; they contained an unusual amount of fat. Portions of the ribs were removed, and freed from fat, before they were submitted to analysis, and the remaining portions were handed to the Curator of the Museum of the School of Medicine.
- "II. These ribs were not fractured; nor did they contain much fat; they were, however, thinner than usual.
- "III. Consisted of one rib only; it was slender, and rough and jagged on the edges, but had not been fractured.
- "IV. Shows the average proportions of organic and earthy matter in several samples, which were remarkable only for being less

perfectly developed than the ribs of healthy adults; some of these had been fractured and perfectly united; others were entire.

- "For comparison with these, I give the composition of the Femurand Tibia of a nine months' feetus in column V. and of the bones from a case of Osteo-malacia in column VI.
- "VII. Is calculated from the analysis of a healthy adult Tiba = by Valentin.
- "VIII. Is calculated from analyses of ribs of a healthy maxaged 25, by Von Bibra."

Months Ostus. Constituents. Ribs of General Paralytics. Nine VII. II. ш. Phosphoric Acid..... 23.52 22.85 19:09: 16.89 24-24 25-95 28.81 29.57 28.54 25.25 28.98 22.2 32-98 34.43 Magnesia and Alkalies87 167 .41 ·43 · RA 1.05 1.87 Carbonic Acid 1.55 1.29 2.09 1.1 1.71 3.37 29 Total Inorganic Constituents .. 55.05 58.11 47.8 49.46: 53.75 41.85 6495 Organic Constituents..... 47.02 38-02 2397 44.84 53.5 50.54 47.15 58.16

TABLE OF ANALYSIS.

71

71

Ratio of Lime to Phosphoric

99-89 100-18 101-8 | 100-00 100-90 100-01

88

7Ī

99

71

98 71 99-98 -98-98

71

11 11

This specimen also contained fat which had not been removed before Analysis.

[&]quot;It will be observed that the ratio of Organic constituents to Earthy matter is much greater, while the ratio of lime to phosphoric acid is distinctly less, in the ribs of paralytics than in those of healthy adults. There are the same differences between the composition of healthy ribs and those of paralytics as between the composition of the adult large bones and those of the feetus. And, generally, the composition in cases of paralysis approaches that observed in cases of osteo-malacia. Whether the defects in

the ribs of paralytics are due to arrested development, or to degeneration of the fully developed bone, it will require further experiments upon carefully selected cases to prove; but from the evidence already obtained, I am led to conjecture that both causes will be found to operate.

"Laboratory, School of Medicine, "6th August, 1870."

This analysis, as far as it goes, shews that in General Paralysis the composition of the bones is changed by the proportionate increase of the organic constituents over the earthy.

This will partly account for the frequency of fractures among insane patients, and also for the position and form of the fractures, which in every case but one herein mentioned occurred in the antenior portion of the ribs, a few inches from the cartilages, and not at the angles, as is generally found to be the case in General Hospitals.

The fractures, too, were generally simply an even division of the One without any jagged edge, and not generally projecting through periosteum.

The result of the analysis is suggestive rather than conclusive, to the condition of the bones in patients the subjects of General aralysis, and it would be unsafe to generalize from a few amples. The analysis is, however, a first instalment towards stermining by scientific inquiry, whether the statements that have seen made, as to the peculiar liability to fracture of the bones in ertain forms of insanity, holds good as a general rule.

The bones submitted to analysis were limited to those taken from he bodies of patients who had died of General Paralysis, but by more extended examination it might perhaps be demonstrated hat other forms of insanity are accompanied by great degeneration f osseous tissue, more or less closely allied to the disease known s osteo-malacia, and generally associated with tubercular disease f the lungs.

The first case alluded to in this paper belongs to this class; the ollowing is a still more striking one:—

H. S., 50, widow, admitted April 11th, 1867. Affected with Mania; second attack. Facts certified: "complete incoherence of

mind and violence of manner; destruction of various valuable articles of furniture; extraordinary delusions respecting imaginary housebreaking," &c.

She was in a very weak condition of bodily health where admitted, and was very fanciful about her food, of which she took very little. Symptoms of tubercular disease soon developed themselves, and she died, after a lingering illness, on April 7th, 1870. She had been confined to her bed for some months before her death, and it was observed that the shape of her body was gradually becoming distorted. At the autopsy, the ribs were found to be so soft that they bent and broke even with the small amount of force that was requisite to open the chest and remove the lungs; and the skull itself was so thin and soft, that it could be easily cut into pieces with a pen-knife. The lungs were studded with crude tubercle, and there was a large cavity. There was also a double spinal curvature.

A case very similar, except in the absence as yet of Phthisical symptoms, is in the Asylum at the present time, in the person of female patient, who was admitted in 1853, and who has kept her bed for some years, on account of disease of the hip-joint and spinal curvature.

It was discovered one morning, about a year ago, that she had sustained a fracture of the humerus during the night, and, although she is an intelligent patient, with a good memory and a keen acquaintance with everything that goes on around her, she was quite unable to give an account of how this accident had occurred.

The following is a case of fractured ribs:—E. W., aged 44, admitted July 1864, in a state of Dementia with General Paralysis.

Unlike most cases of General Paralysis he was always a very quiet and orderly patient.

His mental faculties were all very much impaired, but he was generally employed in picking hair, and on Sundays he acted as organ-blower at the Church for some years.

At the commencement of the present year he became very much worse in bodily condition, the disease of the brain having advanced, and he now developed signs of tubercular disease.

d July 81st, 1870, having been confined to his bed for nths before his death.

had on two or three occasions got out of bed in a purposener, and fallen across some of the other beds, for the sake I placed him in a separate room on a low bedstead of e with padded sides. However, on the night of the 22nd very restless, and was found out of bed by the night, sitting on the floor (he had not strength to stand). The lifted him into bed again, and reported the circumstance of the characteristic of the circumstance of the control of the circumstance of the circumsta

me time previously the lung on this side was consolidated, by the complete dulness on percussion.

st-mortem examination shewed that two ribs had been on the right side, about half way between the cartilage angle.

were simply broken across, the periosteum being un-There was a large cavity in the apex of the right lung, inder being consolidated from infiltration of tubercle, and to the wall of the chest.

s patient was in a separate room, the injury must either a caused by the patient falling across the bed, probably tempt to stand up, or else it must have been effected liberate act of violence on the part of the attendant time of its occurrence was fixed within the limit of ours). Those who stand committed to the theory itual violence is a "recognised system of treatment" in asylums, would probably contend that the patient had been n" by the attendant, with a view of keeping him in bed for e; but I find it difficult to conceive that a man, whose during two or three years had never been open to any of cruelty, would, when there was no one looking on, be violence to a patient in such a condition, especially with

the knowledge that any rough handling might terminate his existence at once.

A somewhat similar accident occurred about two months previously, only that in this case the manner of its occurrence was witnessed.

J. D., admitted March 11th, 1870, with acute Mania; a man with a worn out constitution, and prematurely old, was attacked with inflammation of the cellular tissue of the neck. Whilst under treatment for this affection, he was got up to the close-stool by the attendant, who, however, did not hold him, but merely stood by. He rose suddenly from his seat to walk across the gallery, but staggered and fell over a chair. The Medical Officer was at once informed of the accident, and, on examining him, found that he had fractured a rib. The patient himself made light of it, and said he had broken one before, two years ago.

The cellular inflammation spread rapidly from the parotid gland to the clavicle, and so oppressed his breathing that it was necessary to make a deep incision, to evacuate the matter, which was travelling down the course of the trachea. This afforded him great relief, but two days subsequently he was seized with rigors, followed by pleuropneumonia of both sides, evidently the result of blood poisoning from the sloughing tissues in the neck, and he died on the day week after the fall.

The autopsy confirmed the existence of a fracture of the 11th rib on the right side; and there was the trace of an old fracture of the 8th, marked by considerable thickening of the opposed bones.

In addition to these cases, within the last two months three patients have been admitted with fractured ribs, two of whom are living at present; the third was moribund when admitted, and died thirty-six hours afterwards.

This patient, J. O'H., had paralysis of the right side, and a double fracture of the 6th rib on the left side, the hindermost end of which, near the angle, was jagged and pointed, and projected into the cavity of the chest, causing extensive pleurisy, from which the patient died.

The report of this case was that the man, who was a rag-picker, about three months before had been set upon and severely beaten

1

by some persons unknown; that he received a severe injury to the skull, which produced the paralysis; and that he also had one or more ribs fractured at the same time; that he could never speak English after the accident, and the paralysis was permanent.

The autopsy shewed that, in addition to the double fracture of the 6th, the three next above it were partially broken through, but in a different line, and with no appearance of reparation; and that the 7th had also been fractured, but had nearly united, and was attached to the lung by a strong adhesion.

On the right side, there was evidence of every rib but the 3rd and 12th having been broken, at some remote period. The fractures extended in a straight line downwards, close to the cartilages, giving one the impression of their having been caused by a cartwheel pasing over the man's body; but they had all united firmly, and there was no trace of pleural adhesion.

There was a clot in the posterior surface of the right hemisphere, the brain surrounding it being softened and discoloured; and a similar spot in the right optic thalamus; the left optic thalamus was atrophied, as also the right optic nerve, and the eye destroyed.

The fractures on the left side appeared to have occurred at three different times, the last quite recently, but there was no evidence at the inquest to shew the exact time or manner.

I have now given an account of all the cases of fractured ribs that have occurred lately (or at least that have been detected) in the Rainhill Asylum; a narrative that would be sufficiently uninteresting but for the circumstances under which they occurred; but whilst so much prejudice exists on the subject, and such extravagant theories are built up on a few instances, a simple and straightforward record may perhaps effect a useful purpose, though it should be uninteresting.

It is to the interest of the profession, as well as of the public, that every case, in which there is the slightest suspicion that injuries to patients in Asylums have resulted from violence on the part of those whose duty it is to protect them, should receive the fullest investigation; and one can scarcely complain of articles and comments that appear in the daily press, even though they may be (as

when a Medical Journal states (even on the reputed authority of an ex-superintendent), "that it is a common custom for stout attendants to travel up and down the prostrate bodies of unpleasant patients, and that most Asylum Superintendents must have abundant proofs of the existence of the practice;" and again, that the practice is sometimes varied, by sitting on the patient body, and using it after the manner of a spring-board; it lay aside the impartial and quasi-judicial character which a scientific journal above all others ought to maintain, and libels a not incorposite aside above section of the profession it claims to represent.

If this ex-superintendent, who wisely withholds his name, were indeed cognizant of such outrages, why did he never bring the offenders to justice? Does not his complicity with them contrast rather unfavourably with the conduct of others, who, like Mr. Broadhurst, of Lancaster, have prosecuted, and, on the unsupported testimony of patients, obtained convictions against the offenders?

Possibly it is by some such laches that the ex-superintendent has earned the prefix to his title.

The question has been asked me—Why do these cases of fractured ribs never occur in General Hospitals? It is not difficult to answer. Patients in General Hospitals know that they are ill and weak, and take care of themselves accordingly; if by any chance they meet with an accident, they can describe it; if they are unruly or quarrelsome, they are turned out; but patients in Asylums seldom realize how ill and weak they are, and therefore do not take care of themselves; their sensibility to pain is generally deadened, and therefore they do not complain; and the weakest and most exhausted are often the most quarrelsome.

But taking into consideration the number of lunatics who are massed together in our County Asylums, the violent and unrestrained habits, accompanied by extreme muscular weakness, of many, the low vital energy of nearly all, and the probably increased fragility of the bones in some cases, it is almost a marvel that more accidents do not occur.

It is necessary to be always on the look out for fractured ribs;

the patients in whom they most frequently occur are generally unable to give any account of any injury they may have sustained; each individual patient cannot constantly be under the eye of an attendant without a large increase in the number of attendants, and there is commonly an absence of symptoms indicating any special lesion.

I have adopted the practice of making a thorough medical examination of this class of patients weekly; by this means, the date of any injury can be fixed within a certain limit of time; and as an examination of the body of every patient is made after death, injuries, though received at a remote period, can scarcely fail to be detected.

It is a remarkable fact that epileptic patients seldom sustain fracture of the ribs. Although, from the violence with which they fall, they often receive severe injuries, I cannot call to mind having ever met with a case of fractured ribs in an epileptic patient.

Their immunity is no doubt owing to the muscular rigidity **Producing a greater tension of the frame, and thus enabling it to** withstand injury.

That patients' ribs have occasionally been broken by direct and and wilful violence on the part of attendants I do not deny, but to assert that it is a recognised mode of treatment in Asylums is simply untrue.

A public writer has condemned Asylums as "dark places," but it might be asked, Who keeps them dark? Not the medical officers, who are always glad to receive any of their professional brethren.

The fault lies partly with the medical corporations, who appear to think that any practical acquaintance with mental diseases is unnecessary; possibly agreeing with opinions expressed elsewhere, that a perception of the diagnosis and treatment of insanity is intuitive, and that experience, in this only of the various branches of medicine, is rather to be contemned than encouraged.

Another reason for the popular prejudice against Asylums is grounded on the compulsory admission and retention of patients.

The legislature, with a jealous regard for the liberty of the subject, prohibits the voluntary admission of any patient into an Asylum, or Hospital for the insane, except as what are called

That there is room for impromanagement of our public Asylubearing in mind how recently the present foundation, and how the exceeded the available accommodate to be dissatisfied with the progress

S OF CASES TREATED UPON ANTISEPTIC PRINCIPLES.

BY MR. BICKERSTETH, F. R. C. S. Ed. SEON TO THE ROYAL INFIRMARY, AND LECTURES ON CLINICAL SURGERY.

Reported by Mr. R. A. H. Wood, Clinical Assistant.

I.- Loose Cartilages in the Knee-joint. Removed by eration.

, ætat. 19. A stout, healthy looking youth was admitted a 28rd, 1870, for this disease. The symptoms were those y seen in the affection. When examined, after admission, four loose cartilages were found within the joint. Mr. eth decided to remove them by a direct operation on the c method.

26th.—Operation. Nothing was done until this date a slight inflammatory attack, probably caused by the ution necessary in the diagnosis.

atient being placed under chloroform, a continuous stream lic lotion (1 in 20) was kept running over the joint. nal incision, about 11 inches long, was then made on the le of the knee, opening the synovial cavity. After conmanipulation three cartilages were removed. One of s about the size of a marble, the two others rather less. 1 it was probable that another cartilage was present, it was est not to proceed any further, as it could not readily be The stream of carbolic lotion was kept up over the part rithout any intermission. Bleeding was rather free, but ires were required. Sutures of carbolised catgut were lose the wound, and a layer of carbolic plaster placed upon dipped in carbolised glycerine, and oiled silk over all, comie dressing.

almost perfectly healed. Not the the dressings, but a slight smell extend the knee without any pain. with carbolic plaster and carbolic g May 6th.—Wound healed con Walked with very little lameness, a May 16th.—Walked out of hospi June 22nd.—Patient was re-ad return of his former symptoms a former symptoms a fermion of the symptoms and symptoms.

return of his former symptoms a former symptoms a former symptoms a former symptoms a former symptom and a former symptoms after the former operation.

June 28rd.—Mr. Bickersteth ren similar to that performed before—a being kept up over the incision.

July 1st.—Patient progressed far the knee was dressed for the first eight days ago. The wound was fo puration, nor fœtor.

July 11th.—Got up and walked a July 14th.—Discharged cured.

In this case the cavity of the

Case II.—Ganglion of Hand. Operation. Recovery.

M. C., setat. 20, waiteress, admitted May 12th for a swelling in the palm of the right hand and wrist, which had existed five years. The palmar swelling was irregular in shape and had obtained no very great bulk; it was tense and elastic involving also the middle finger. The swelling on the wrist projected above the annular ligament, was globular in shape, and apparently distinct from the other. In both, slight pressure gave a sense of crepitation, as if granular bodies suspended in fluid were being rubbed over a rough surface. The hand is perfectly useless, and movement of the fingers causes pain.

May 16th.—Operation. The patient being chloroformed, a stream of carbolic lotion was kept playing over the part incised during the whole operation, as in the last case. An incision, two inches long, was first made along the palmar surface of the middle finger, extending a little way into the palm through the swelling. opened the sheath of the tendon. A quantity of thin serous fluid was discharged, and also a number of granular semi-trans-Perent bodies, about the size of mustard seeds, some being free, others adherent to the inner surface of the sheath and the tendon. Those adherent were clipped off with scissors, the others, together with the fluid, were pressed out of the sac. This did not empty the swelling in the wrist. Another incision was made longitudinally through it. The stream of carbolic lotion being now directed on this part. The contents of the cyst were similar to the others, but the granular bodies were larger. Hæmorrhage from both wounds was rather free, and checked by torsion and carbolised cateut ligatures. Carbolic plaster was placed over the wounds; over this, lint dipped in carbolised glycerine, and oiled silk. hand and finger were kept quiet by bandaging them to a zinc Splint applied to the back of the hand. At night, ordered opium, two grains.

May 17th.— Has had a good night. No pain nor redness of arm. Opium repeated.

May 18th.—Very comfortable. No pain or constitutional irritation.

May 24th.—Has gone on well until this date. Dressings removed

by Mr. Bickersteth. No suppuration. A little gummy serum about the edges of the wounds. No traces of inflammation; sutures still holding. A stream of carbolic lotion was kept upon the part during the dressing.

May 30th.—Dressings removed for the second time, dry and still retaining an odour of carbolic acid. Incisions scarcely visible. Not the least discharge, except the natural secretion of the skin. Mr. Bickersteth felt quite sure that the deep parts were healed, and therefore ordered a simple dressing of lint and cottonwool, with a bandage to exert slight compression for a day or two.

June 4th.—Discharged cured, with almost perfect use of her hand.

CASE III.—Popliteal Aneurism. Ligation of femoral artery on the antiseptic method, with complete success.

J. K., ætat 35.—Labourer. Admitted May 2nd, 1870, for popliteal aneurism, which had occupied nearly two years in its growth. The patient had a pale and anxious expression, but was otherwise healthy. The tumour was of considerable size, filling up the whole of the left popliteal space, and was especially large on the outer side. Pulsation was scarcely visible to the eye, or appreciable to the hand; but an aneurismal bruit was heard over the greater part of the tumour, loudest on the outer side.

May 6th.—No bruit audible, probably from a clot obstructing the aneurismal orifice.

May 8th.—Bruit again audible.

Mary 12th.—Carte's apparatus applied.

May 14th.—Great discomfort from the tourniquet. To be discontinued. Bruit not audible immediately after removal of tourniquet, but it gradually returned.

May 17th.—Ligation of the Femoral by Mr. Bickersteth. The incision was the one usually employed. In dividing the sheath of the vessel a small artery bled freely, and was closed by torsion. The sheath was more closely adherent than usual. A ligature of stout carbolised catgut was used, and the ends cut short off. The wound was washed out with carbolic lotion, and closed with a continuous wire suture. All instruments used were dipped in

carbolic lotion previously. Two layers of carbolic plaster were placed over the wound; then lint, soaked in carbolised glycerine (1 in 10), and over this oiled silk and cotton-wool. The limb was enveloped in a flannel bandage.

12 p.m.—Pulse 84. Rather restless from pain in back. Toes warm. No pulsation in tumour. Ordered tinct. opii. m. 80.

May 18th.—Comfortable. Slept pretty well. No pain. Toes warm.

May 24th.—Patient went on well to this date. The dressings not having been removed since the operation, eight days ago, they were taken off. The wound was perfectly healed, having the appearance of a red seam. The sutures were removed. The deep parts also seemed united. Not the slightest fector nor trace of discharge, except the sebaceous secretion of the skin. Dressings still retain the odour of carbolic acid. Dressed as before.

May 80th.—Dressings again removed. At one point a little sore spot was found as if the wound was opening, but proved to be a small bit of the suture wire, which was removed. The rest of the wound was perfectly healthy.

June 10th.—Going on well. Feels quite comfortable. The tumour in the ham is quite small and firm.

June 18th.—Allowed to get up.

July 7th.—Discharged cured. There was one little point which was not quite healed, and obstinately refused to do so, but the man was anxious to go out, and he was discharged.

ILLUSTRATIONS IN OPERATIVE SURGERY.

By REGINALD HARRISON, F.R.C.S.,

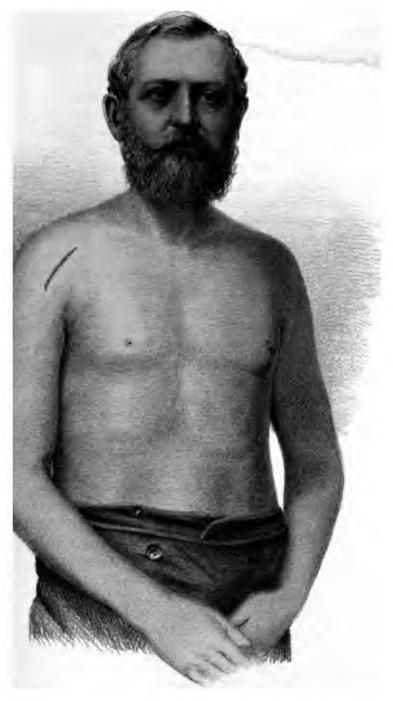
LECTURER ON THE PRINCIPLES AND PRACTICE OF SURGERY AT THE SCHOOL OF MEDICINE.

AND ASSISTANT SURGEON TO THE ROYAL INFIRMARY.

Excision of the Shoulder Joint.

The following case of excision of the shoulder joint is introduced with an illustration, as affording a good example of the kind and degree of relief that is afforded under such circumstances. On referring to the illustration, Plate I. it will be seen, that the form of the shoulder on the right side, where the operation has been performed, is quite as perfect as on the left, the roundness of the joint and the prominence of the deltoid remaining, although a considerable portion of the humerus has been removed.

The patient, a dock labourer, was admitted last year under my care at the Royal Infirmary, in consequence of a very acute inflammation of the right shoulder joint, traceable to an injury received in lifting a heavy weight. In spite of active treatment by Dr. Cavanagh, under whose care the patient first was, the symptoms increased in severity, and disorganization of the joint was imminent. When admitted into the Infirmary there was great constitutional disturbance. An abscess extending to within a short distance of the elbow joint was opened shortly after his admission, from which a large quantity of matter continued to discharge. Distinct grating of the articular surfaces was soon felt. patient became hectic and much exhausted, it was agreed after a consultation, to excise the joint. I had considerable doubt however as to the result: observation leading to the conclusion that in acute joint destruction the condition is unfavourable for section of the bone in the contiguity of the articulation, and a consequently greater liability to pyæmic infection. In the case of the shoulder and hip the degree of danger from this circumstance is certainly less than in other joints, as the section is usually confined to the



N° 1 EXCISION OF SHOULDER JOINT.



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ingle bone on the distal side. As there was no alternative but imputation, it was decided to excise the head of the humerus.

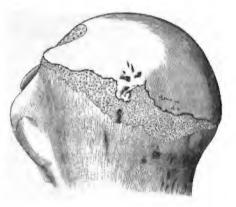
The operation was performed on August 31st, 1869.

The single incision was adopted, commencing a little external to the coracoid process, and extending downwards for about four inches. The long tendon of the biceps was turned aside and the capsule of the joint opened. The muscles attached to the two tuberosities were then divided, and the head of the bone sufficiently protruded to admit the passage of a chain saw behind the surgical neck by which the section of the bone was effected. An incision over the spine of the scapula permitted the removal of some necrosed bone, and completed the operation.

The following figure represents the portion of humerus removed.

The patient made a very good recovery, and has now been engaged as a labourer in a cotton warehouse for four months.

He came to see me on August 29, 1870, (two days short of the anniversary of the operation), and told me that his arm was almost as leeful as the other. He an lift a 56 lb. weight from



ground, and raise a chair a considerable height to the level the shoulder. His general health is perfect.

On referring to the illustration it will be seen that the metry of the limb is completely preserved.

Judging from other excisions of the joint that I have had an Portunity of examining, I associate the preservation of the m with the adoption of the single anterior incision, which is one usually practised by the Surgeons of this Infirmary. It ill be found best figured in Bell's Manual of Operative Surgery. The advantage of this incision chiefly lies in its avoiding any sion of the tendon of the biceps or the deltoid muscle, the main apports to the articulation after the severance of the muscles

attached to the two tuberosities. Some surgical authorities recommend exposing the joint by making a flap of the deltoid; others a perpendicular incision through the thickness of the muscle, commencing from the tip of the acromion. A comparison of results will, I believe, be found much in favour of the plan adopted in the present instance.

Excision of the Upper Jaw.

In the following case (Plate II.) I removed the whole of the upper jaw for disease of probably a malignant character. The patient's history may briefly be stated.

About two months before his admission to the Infirmary he experienced pain in the right side of the face, followed by some swelling. He attributed this to the breaking of a tooth by a dentist when endeavouring to extract it. The swelling gradually increased, and on my seeing him at the Infirmary his condition was as follows: - There was considerable tumefaction about the right cheek, evidently connected with enlargement of the right The right eve was more prominent than the left, and there was considerable bulging of the anterior wall of the antrum. On opening the mouth the palatine process of the bone was ulcerated and covered with fungating granulations. An offensive discharge issued from the mouth and nose, rendering the patient very unpleasant to himself and those in his immediate neighbourhood. The disease appeared to be confined to the one bone, and had not seriously involved any of the surrounding soft tissues. It was decided, after a consultation, that the whole jaw should be removed. I performed the operation on the 26th of July 1870, after the following manner:-The soft palate was first detached by an incision along the posterior margin of the hard palate, which was carried along the roof of the mouth as far as the anterior palatine foramen. An incision was then made from the malar bone, just below the eye, to the nose, this was joined by a vertical one passing by the side of the nose and through the upper lip. (The line of these incisions may be seen on reference to the plate.) The flap thus formed was turned down so as to expose most completely the whole of the bone to be removed. The section of the several parts of the bone was



N° 2
EXCISION OF UPPER JAW



then completed. The bone was found so softened as to break on being seized with the lion forceps, and consequently there was some difficulty in getting it all away. This, however, was satisfactorily completed. There was no great amount of hæmorrhage during the operation. The wound was plugged with lint saturated in perchloride of lion, and then the flaps were accurately adjusted. The patient made an excellent recovery, and was able to get up the 17th day after the operation. He left the Infirmary on September 3rd, the only inconvenience being a slightly edematous condition of the lower eyelid, which is gradually disappearing.

I selected the incisions I have described as those which appeared not only most convenient for exposing the bone, but which would least disfigure the patient.

The incision commencing at the angle of the mouth and carried upwards to the malar prominence is, I think, open to several objections. In the first place, all incisions into the angle of the mouth are usually followed by a puckering, which much disfigures this important feature: again, the line of the incision is directly across the nerves of the face, descending from the temple, and the blood-vessels passing upwards. Further, there is the danger of dividing the duct of the parotid.

On referring to the illustration it will be at once seen how slight the deformity is, there is no paralysis of a single muscle of the face, a condition which not uncommonly follows the incision from the corner of the mouth.

The illustrations have been executed from photographs in my possession.

NOTES ON THE TREATMENT OF ULCERS OF THE CORNEA AND NEBULÆ.

By T. SHADFORD WALKER,
SURGEON TO THE LIVERPOOL EVE AND EAR INFIRMACY.

Ulcers of the Cornea, and their consequences, nebulæ, maculæ, so frequently occur, cause so much suffering, and a followed by results of so serious a nature, both as regards tappearance of the patient and the amount of vision remaining affactive symptoms have disappeared, that a few brief remarks on tature and treatment of the graver forms commonly brought und notice, may be of service to those practitioners who have special opportunities of observation.

It would evidently be impossible, in the limits of a short paper to describe every form of corneal ulcer. I shall therefore not allude only to the following, as being most important or most troublesome to be dealt with, viz., traumatic ulcer, followed the infiltration of the cornea with pus, entrance of pus into the aqueous chamber, and hypopyon; ulcers occurring in the course of granular conjunctivities; the kind of ulcer called serpent; and ulcer met with in phlyctenular corneities.

1. Traumatic Ulcer. This form, as its name implies, is consequent on injury, most commonly from small pieces of metagrit, &c., struck off by artisans while at work, becoming imbedde in the outer layer of the cornea. If the foreign body be sharp, a if its point lie above the general surface, the pain produced be friction against the highly sensitive under surface of the eyeli ensures its speedy removal. But should the intruding bod penetrate a little more deeply, or have more or less rounde surfaces, it is frequently allowed to remain for days, until the

patient finds from the increasing dimness of sight that something is at fault, and he presents himself before the surgeon in the state now to be described. On opening the eyelids, an irregular greyish pit is seen, at the bottom of which the portion of metal or grit can generally readily be observed or felt. Around the edges, the cornea is dim, infiltrated with lymph breaking down into pus, and if the patient is old or feeble, or if the delay in applying for relief after the receipt of the injury is great, a quantity of pus, varying according to the severity and depth of the wound, may also be traced into the aqueous chamber, along a track commencing at the lower edge of the ulcer. The conjunctive covering the eyelids and eyeballs is deeply injected, and the patient complains of great pain, particularly in the frontal region, producing total loss of appetite and of sleep. The sight is of course greatly impaired.

The cornea, having its continuity broken and its texture softened, is dangerously inclined to yield before the internal pressure. Great risk of perforation, loss of aqueous humour, and consequent prolapse of iris into the bottom of the ulcer then occurs, to be followed, in the majority of cases, by a closure of the pupil, the edges of which become united to a dense white cicatrix or leucoma; and in others by staphyloma, causing great deformity in addition to the loss of vision.

Treatment.—In the milder class of cases, where no hypopyon can be observed, and the mischief is limited to the immediate neighbourhood of the injury, it will generally be sufficient, after first carefully removing the metal or grit and the hardened piece of cornea surrounding it, to instil within the eyelids a drop or two of a weak solution of atropia (gr. i. ad. 3j.) twice or thrice daily; then to keep the eyelids closed by means of a pad of lint and strip of plaster, protected by a few turns of a bandage round the head. The bandage and lint ought only to be raised while the drops are being introduced, which being done, they must be re-applied, and kept pretty firmly bound for several days; after which, should the eye be able to bear the light and the ulcer show signs of healing, the bandage alone, or a shade, such as is commonly worn, will be all that is necessary. The more severe cases require, in addition to these measures, further treatment. It is almost always



NOTES ON THE TREATMENT OF

cessary to puncture the cornea at the lower edle, or Graefe's or Sichel's cataract knife, hich is filling the anterior chamber. Care sho vacuate the contents too quickly, as thereby increased, as well as the flow of blood to the eye atropine solution should be dropped in after t the eye with warm water, and the pad and band applied firmly. After the puncture, and agai advisable to give an opiate; two grains the first wards usually give relief from pain and procure surgeon should see the patient daily, applying t dressing himself; otherwise the good results likely to follow. Quinine, given in two grain day, is almost always requisite, besides being the appetite and strength, broken by the pai After a few days of this treatment, in all but t formation of pus is arrested, the ulcer is smalle less infiltration in the surrounding parts, and t increases. The patient may now use a weak & composed of alum or sulphate of zinc, in stre ounce of poppy water. After the application of few days the ulcer heals, leaving a cicatrix or extent corresponding to the size of the pr treatment of the scar will be mentioned at t! should be stated, that it is sometimes n pus a second time, as there is a dispo cause a re-formation of pus in the aquec patient is young or strong I have producing absorption of pus without r that in favourable instances, and when be collecting rapidly, this mode of to tried for a day or two, the surgeon car ing the result.

2. Ulcers occurring in conjunction the Conjunctiva, are generally shalled edges, towards which one or more d

may be seen to run from the conjunctival border of the cornea. Sometimes, in debilitated constitutions, or where an acute attack of inflammation supervenes on a chronic granular state of the eyelids, the ulceration takes on the sloughing or the suppurative character. Whatever the nature of the ulcer, it is extremely sensitive when exposed to light or to touch. The patient keeps the evelids closed if possible, or if obliged to open them winks violently, and in so doing increases the irritability of the eyes, already greatly heightened by the constant rubbing of the roughened lids over the denuded corneal surface. Every attempt to examine the condition of the parts within the eyelids is resisted by their spasmodic closure, by a copious flow of tears, and frequently by a fit of sneezing. It thus becomes difficult properly to observe what is going on, and still more so to apply suitable dressings. should be used by the surgeon himself, as it is almost always impossible to induce the patient or his friends to follow out instructions on this point satisfactorily; and if a thorough examination is not made from time to time, perforation may take place, the possibility of which in all cases ought to be kept in view.

Where the ulceration is recent and the photophobia is not great, the granular surfaces may be touched with the modified lunar caustic or sulphate of copper, twice a week. A weak ointment of red or yellow oxide of mercury may be usefully applied within the eyelids every night and morning by means of a camel's hair brush, and the eyes may be bathed with warm poppy water from time to time during the day. Protection is best afforded by a shade, admitting air, but excluding light. No hot or tight bandage or handkerchief should be allowed. The internal treatment should consist of full diet, and the administration of tonics, especially iron combined with quinine, and cod liver oil. Fresh air and exercise out of doors are decidedly beneficial. When the disease is of a more severe character or of longer duration, the use of a weak atropine drop twice or thrice daily is necessary until the irritability partially subsides, upon which the swollen lids may be lightly brushed over with the linimentum iodi, or a strong solution of nitrate of silver, about twice a week. These remedies. steadily persevered in, and modified from time to time by the varying phases of the malady, seldom fail to restore the cornea and conjunctiva to their normal state. In a few neglected cases of an extreme character, other methods of treatment must be adopted which want of space forbids my describing here.

8. The Serpent Ulcer, the nature and treatment of which have recently been the subject of special study by Professor Saemisch, is so called from its tendency to spread rapidly and cause extensive sloughing of the cornea, without being accompanied by inflammatory symptoms, at any rate in the majority of instances. It occurs chiefly in enfeebled or old persons, and is almost always complicated with hypopyon, which is sometimes due to perforation of the cornea by the ulcer, sometimes to inflammation of the posterior corneal layers, and at others to iritis. It commences as a greyish infiltration which soon becomes an ulcer, and not only spreads on the surface but penetrates deeply into the substance of the cornea. quickly causing perforation and sloughing unless checked by proper means. Being free from inflammation and generally from acute pain, it is often allowed to proceed to a dangerous extent, and even till the mischief is complete; hence the importance of taking prompt measures. The most effectual is the division of the ulcer after the method devised by Dr. Saemisch, which essentially consists in passing Von Graefe's narrow cataract knife through the healthy cornea at a short distance from the temporal edge of the ulcer, carrying the knife along the anterior chamber till the point reaches the healthy cornea at the opposite side, when a counter puncture is made, and the ulcer completely divided through its base and whole extent, the aqueous humour and pus, if any exists, being allowed to escape slowly. A compress is then applied, and after a few hours atropine is dropped in. The ulcer under this treatment soon begins to heal. It is requisite for some time, twice daily to insert a fine probe between the edges of the incision to let off the aqueous humour, until the healing of the ulcer is thoroughly The general treatment should consist of tonics and established. generous diet, given with a free hand. Under this plan, the good effects of which I have witnessed, the recoveries are both numerous and steady.

4. Ulcers occurring in the course of Phlyctenular Corneitis call for notice, not so much from their being usually attended by danger, as from the fact that they cause extreme suffering, and because they make their appearance in crops. No sooner does the surgeon get rid of one set and congratulate himself that the end is at hand, than another set shews itself in another part of the cornea, causing a recurrence of the train of symptoms previously observed. phlyctenulæ present themselves first as vesicles, which soon break, discharge their contents, and are converted into greyish or yellowish shallow ulcers, whose edges are elevated above the general surface. By exposing the corneal nerve filaments they create great pain, both ocular and frontal, increased on exposure to light, profuse lachrymation, followed by loss of appetite and sleep, and impairment of the general health. If the ulcers are numerous and the movement of the eyelids produces, as it generally does, much suffering, a firm compress bandage should be applied for some hours. atropine solution should be dropped into the eye several times a day, and an ointment of mercury and opium should be rubbed in over the temple and eyebrow every night and morning. The eye should be bathed with hot poppy water occasionally, and light carefully excluded by means of eye shades or coloured spectacles. door exercise should be recommended if the patient's strength will permit, and the general health maintained by tonics, full diet, and stimulants carefully administered. By these means in a few weeks the disease can generally be controlled, and a change of air to the seaside may be reckoned on to complete the cure.

Having now considered the subject of Ulcers of the Cornea, as they occur in the forms most interesting to the practitioner, and having described the treatment appropriate to each, I proceed to notice the results of the healing of the ulcer, with the object of showing the various approved methods adopted for producing their total, or, where that is impossible, their partial disappearance. Wherever an ulcer of the cornea has existed, no matter what its origin or course, so soon as the ulcerative process is arrested and the healing process begins, it will be observed that the portion of the cornea affected is no longer clear and transparent as before. The

new matter deposited in place of that destroyed by ulceration more or less opaque, and therefore interferes with correct vis Contraction follows deposition, and a nebula or macula is consequence. These opacities are observed either on the su or extending more deeply into the layers of the cornea. may be very thin or very dense, and may occupy a large or or very small extent; this point depending on the nature, seve and size of the previous ulceration. Another class of macu found to occur without ulceration, in the course of some kine These usually present the appearance of mi corneitis. roundish specks, scattered pretty evenly throughout the cor and so numerous as often to produce general opacity, and the cornea the appearance of a frosted window. This form requ different treatment from those resulting from ulceration, which be described afterwards. It must not be forgotten that the extreme form of nebula is seen after the extensive ulceroccurring in Ophthalmia Neonatorum, or in Gonorrheal Ophthal Here the whole of the cornea is involved, either in the stag infiltration with inflammatory deposit, or of sloughing ulceronly slight dimness exists, and both eyes are affected, the pa habitually strains the eyes in the effort to see distinctly, an induces muscular distress, and impairment of the accommod: of the eyes. In some cases, the defect of sight depends on situation of the cicatrix, or nebula. For instance, a nebula, of small dimensions and depth, situated at or near the col centre, is of a much more serious nature, and vastly more impoto the sufferer, than a very large or dense one near the cirference, where it would be out of the line of vision. perhaps, the largest and most dangerous class of cases, espec when to central situation is added density, and, what us When, in addition to the fores accompanies it, depth. circumstances, we find perforation to have taken place, catalogue of disaster is complete, for here a portion of prole iris plugs the internal orifice, or adheres to the inner surfathe nebula. It is noticeable, that where the opacity, who dense or not, is situated so as partly to obscure one sid the pupil, it is followed sooner or later by strabismus,

direction of which depends, of course, on the situation of the nebula.

The treatment of Opacities of the Cornea depends, to a certain extent, upon their duration. If a patient has allowed a long time to elapse before the inconvenience under which he labours, from the existence of the nebula, or the unsightliness of the cicatrix, compels him to try to obtain relief, the freedom from active symptoms, and the quiet condition of the parts, permit of a more stimulating plan being adopted, than if the ulcer has only recently closed, leaving the structures in a state highly susceptible of again taking on inflammatory action. It is therefore necessary, first, to make sure of this point, and to examine the condition of Having ascertained that there is no the palpebral conjunctiva. undue sensitiveness of the parts covering the globe and inner surface of the eyelids, to which remedies must be applied; and further, the case being of recent origin, it is well to commence by prescribing a weak astringent collyrium, composed of alum, zinc, or bichloride of mercury, with which the eyes may be bathed three times a day. The strength of this wash should not, at first, exceed two grains to the ounce of water when the wash is composed of sulphate of alum or zinc, and of one grain to six ounces in the case of the bichloride wash. At night, an ointment of the red oxide or the weak nitrate of mercury should be inserted between the edges of the evelids by means of a camel's hair brush, in such a manner that the ointment gets fairly inside the eyelids, and comes directly in contact with the nebulous portion of the cornea. If the applications cause so much pain that the smarting does not disappear in about fifteen minutes, or become quite bearable at the expiration of that time, the strength should be lowered by one-third, or even to a greater extent if necessary, the creation of excessive action being of no service in the removal of the malady. By using one or other of the above-mentioned remedies, with due care and discretion, for a few weeks, the more recently formed and slighter nebulæ can generally be got rid of, and a clear, free cornea re-established. But in the cases of longer standing, other remedies are necessary, in addition to the milder ones suitable to recently formed nebulæ. In old cases, applications of a distinctly stim lating character afford the best results. They require to be us for a much greater length of time than in fresh cases, and to changed occasionally, in order to prevent delay through the syste becoming accustomed to their action, and ceasing to respond.

Amongst those found to answer most satisfactorily, are t vinum opii, solutions of nitrate of silver, iodide of potassium, a sulphate of copper and zinc, of various strengths, applied in t form of drops or washes. In powder, the dried sulphate of sc and calomel render good service. Lastly, the unguentum hydra nitratis mitius, and the unguentum hydrarg. oxydi rubri and fla in strength varying from one to four grains to the drachm of fat lard, materially assist the cure.

When drops are deemed advisable, they should be applied, means of a drop-bottle or a camel's hair brush of moderate si to the inner surface of the lower cyclid, whence they speed reach the cornea, producing in a few minutes a reddened appear ance of both eyeball and eyelids. The application ought to made twice a day, the early morning and bedtime being the be The drop-bottle is the best adapted for the use of wash also, since, when applied in the ordinary manner, much of the bulk is wasted or never comes in contact with the cornea at a while, on the contrary, when the bottle is used a smaller quanti suffices, and the simplicity of the instrument ensures the great control of the remedy, and certainty in its application. It w allow only a drop to escape, or send a stream into the eye, at t pleasure of the operator, without touching any part of the orga in both of which respects it is greatly superior to the brush solid glass rod, and is preferable to eye douches on account of greater cheapness, portability, cleanliness, and want of resemblar to a surgical instrument—the last point a very important o where children, who are the most frequent sufferers, are concern

Ointments must be sufficiently soft to be taken up by a camhair brush. They can be readily introduced by gently separat the eyelids with the fingers of the left hand, whilst with the rihand the brush is made to pass, firmly and gently, quite inside eyelids, the action of the muscular apparatus of the lids sufficient to remove enough of the remedy. The proper times for the application of ointment are, the last thing at night, and after dressing in the morning. When drops or washes are also used in the same case, ointments must always be applied after the former; otherwise the one remedy will protect the eye from the action of the other, and neutralise it altogether. It is usually well to prescribe both a drop and an ointment, or a wash and an ointment, to be used in the treatment at different times of the same day, instead of only using one remedy. The powder may be applied either by gently blowing a quantity, equal in bulk to half a pea, through a quill, placed between the eyelids well opened, or by dipping a dry camel's hair brush into the powder, opening the lids, and flirting off a small quantity by a smart tap with the finger.

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All these remedies, no matter how applied, cause considerable which is unavoidable. But the suffering is useless and injurions if it lasts longer than about half an hour. Should any remedy be found so acting, its strength ought at once to be lowered, until the duration of the pain is brought within this limit. A little care soon enable the surgeon to decide on the proper strength. After having steadily used a remedy for about a month, it is generally advisable to change it for one of a different nature, as the absorption of the nebula is observed to be more slowly carried on when the same application is too long continued. For instance, if the treatment be commenced by one or other of the drops and ointments previously mentioned, these should both be changed, recourse being had to a powder and a different ointment, or to a wash without an ointment. By alternating in this way, ground gained in the first instance is less likely to be lost, and fresh impression is made upon a nebula already beginning to yield. Wherever a nebula has been partially removed, the patient should be urged to persevere, in spite of what may appear the length of time during which he may have been under treatment, since great Patience is requisite in all old standing cases, even when the disease is superficial. Many cases can by their nature be susceptible of only partial removal, but even this may be of great Portance to effect, in order to improve vision or personal appearance. Finally, it is useless to attempt the treatment of nebulæ

which penetrate through the whole or greater part of the thickness of the cornea. They are always very dense, and present an opaque white appearance, well known to those who see a great number of cases.

PERISCOPE OF MEDICINE.

By Dr. DAVIDSON,

Anatomy of Brain-shocks.—Mr. Callender, in the last volume of St. Bartholomew's Hospital Reports, has a valuable paper on this subject, founded on the examination of 99 cases of disease or injury of the brain. He finds that brain-shocks are rapidly fatal when bleeding takes place into the pons, into the ventricles, or upon the surface of the brain. The pupils are generally fixed midway between contraction and dilatation, vision being seldom

Pain occurs in affections of the outer gray matter, and is

Loss of speech generally coincides with disease or injury of the anterior cerebral lobes, or the parts about the corpus striatum or motor tract, on the *left* side; but the locality is not evidently limited to the third frontal convolution (Broca's region).

absent when the bleeding takes place into the corpus striatum or

In contrast with this association of aphasia with injury of the left side of the brain, he finds a connection between convulsions and injury of the right side.

He divides convulsions into three groups:

optic thalamus.

- 1. Those connected with tubercle about the vessels of the pia mater, or aneurisms, or hæmorrhage from the branches of the middle cerebral artery: in such the convulsions are probably due to irritation of the vaso-motor nerves affecting the blood supply.
- 2. Convulsions occurring at the time of hæmorrhage—due to shock.
- 3. The remaining cases of convulsors which he examined were all connected with left side paralysis, that is, with injury of the right side of the brain, the part affected being outside the corpus striatum or optic thalamus.

Aphasia. - Dr. H. Jackson thinks it probable that the degree of

affection of speech depends not only on the amount of brai substance implicated, but also on the distance of the diseased pa from the corpus striatum—the point of emission of the orders the will to the muscles. The nearer the injury of the brain is the corpus striatum, the more likely is it to affect only articul tion; while more remote injury will cause mistakes in word Similarly, Dr. Russell, of Birmingham, (Med. Times, Sep. 1 1870,) in recording a case of right hemiplegia in which there we no affection of speech (probably from hæmorrhage into the corpu striatum), remarks : -- "The extent to which speech is affected varie much in hemiplegia, depending probably on the extent to which the convolutions are involved. For experience seems to prove the not only must the motor tract be involved but also a portion of th convolutions. Hence loss of speech in hemiplegia is mos commonly associated with embolism of a cerebral artery, which supplies at once a motor tract and a considerable tract of convolution.

Dr. Wadham (St. George's Hospital Reports, 1870,) records curious case of hemiplegia of the left side in an ambidextrous begin whom aphasia (purely a-tactic, not a-mnemonic) subsequent occurred, and continued for three months, being followed by gradual but imperfect recovery of speech. The boy died from exhaustion twelve months after the original seizure. On examination, there was found total destruction of the island of Reil on the right side, while the third left frontal convolution was healthy. D Wadham suggests that the right and left sides of the brain are lil the right and left hands; and that in most men the organ of speece on the left side is educated, the right remaining dormant, the contrary being the case in left-handed men. A similar remark made by Niemeyer (Mcd. Times, Jan. 15, 1870).

Treatment of Diabetes.—Dr. Pavy (Guy's Hospital Report states that he has found Opium, Morphia, and Codeine to have direct controlling power over the elimination of sugar, and that to other treatment which has been proposed for this disease has an thing like the effect of these remedies. Codeine is the best, becau it is less narcotic than the other two. He begins the treatment wi half a grain of Codeine, and gradually increases the quantity. To

drug produces no contraction of the pupil, or foul tongue, or other effect beyond diminishing the symptoms of the disease. Dr. Pavy has also been treating Diabetes with large doses of Carbonate of Ammonia. Dr. Allbutt (Lancet, July, 1869,) pronounces the treatment of diabetes with peroxide of hydrogen to be unsuccessful. Arsenic has been recommended of late by several writers.

Donkin (Lancet, 29th Nov. 1869,) has placed diabetics on a purely milk diet, and found that in some cases a sudden and extraordinary improvement resulted, both as to the amount of sugar excreted, and in the other symptoms. This treatment is much better relished by the patients than any of the other modes of restricting them to animal diet. It must be persevered in, methodically and exclusively, till convalescence is established. Dr. G. Balfour (Edin. Med. Jour., Feb., 1870,) relates a case where great benefit was derived from this mode of treatment. In this case the patient took six pints of skim milk daily.

Pathology of Diabetes. — Dupré's experiments (Practitioner, May, 1870,) seem to show that the sugar is formed in the kidneys. Dr. Dickinson describes peculiar appearances in the brain and spinal cord, which he found in all the cases (five) of diabetes he has examined. They consisted of degeneration of nerve tissue around the arteries at various points, especially in the medulla oblongata and pons varolii. This degeneration led to destruction of tissue, and the formation of cavities at these points. Does not this imply that diabetes is a disease of the nervous system, and that the formation of sugar arises from it, just as we find it occurring in apoplexy, injuries of the head, and other kinds of cerebral irritation?

Acidity of the Urine.— Dr. Bence Jones has shown that when large doses of lemon-juice, or of sulphuric acid, are administered to a patient, the effect is much less than the effect of digestion in causing variations in the acidity of the urine. It must be useless then to give the vegetable or mineral acids, with the view of directly increasing the acidity of the urine.

Early indications of irritation of the Kidney.—Dr. Rees pointed out, many years ago, that in albuminuria, the extractive matters of the blood always accompanied the albumen, and could be detected by the tincture of galls. He now says that

in the early stage of nephritic irritation these extractive matters the blood may be detected in the urine before there is any album present, and so may be looked upon as premonitory of albuminur—(Guy's Hosp. Rep. xiv.)

Rheumatic Fever. — Drs. Gull and Sutton (Med. Chir. Tran 1869,) relate the result of their observations of Rheumatic Fever hospital. They conclude that—"In rheumatic fever the tendence is for the heart to become diseased during the first few days of the fever;" and "that if at the end of the first week the heart is free from disease, there is little or no tendency for it to become disease during the later weeks, provided the patients are treated by resulting the later weeks, provided the patients are treated by resulting the later weeks, and that there is no evidence that remedic (whether alkalis, citric acid, or blistering the joints,) prevent the occurrence of heart disease.

Treatment of Rheumatic Fever.—Dr. Russell Reynolds (B Med. Jour., 28th Aug. 1869,) considering that rheumatic fever analogous to erysipelas and diphtheria, as spreading inflammator affections, has been led to treat it by large doses of Tr. Fer Perchloridi, and with great success, the joints being relieved, as the duration of the attack shortened.

Nocturnal Incontinence of Urine in Children.—Sir D. Corrige (Dublin Quarterly, Feb. 1870,) has proposed a mode of treatme for this troublesome affection, which may be adopted when t ordinary means of relief have failed. It is to seal up the ureth every night with collodion in the following manner. "While t prepuce, slightly curved up, is held with the left hand, smear or the little cup, thus formed by the extremity of the prepuce, we collodion by means of a camel's hair pencil or the blunt end o penholder. Almost as fast as applied, the collodion solidifies. contracting, it draws together the edges of the prepuce, and the the exit for the escaping urine is closed. A boy, aged eleven, he after one lesson been able to use the collodion himself. Fourted days' use is sometimes sufficient for cure. On arising in the morning the prepuce is found slightly distended with urine, at the collodion may be removed without difficulty."

This plan of treatment has been used with success in the Liverpool Children's Infirmary.

Trousseau looks upon this malady as a neurosis. He finds that it is often hereditary, and often associated with other neuroses, particularly with spermatorrhea, "seminal incontinence succeeding at puberty to the urinary incontinence of childhood." He considers the immediate cause of the incontinence is excessive irritability of the muscular fibres of the bladder, and he therefore administers belladonna, and with great success. When the incontinence depends on atony of the sphincter of the bladder, it occurs in the day-time as well as in the night. This form of the disease is little benefited by belladonna, and requires the administration of strychnia.

Feeding of Infants. - Dr. Ballot, of Rotterdam (Med. Times. March, 1870,) recommends butter-milk for the rearing of infants. whose mothers have not enough milk. His favourable opinion of this mode of feeding them is founded on experience. butter-milk used was just what might be easily bought in towns, and not always the best, for he acknowledges that butter-milk varies much in composition. Butter-milk differs from mother's milk in containing more casein, less sugar and salts, no butter, and a little lactic acid. Probably one reason why butter-milk is easily digested by infants is the presence of the lactic acid, which, with pepsine. dissolves albuminous substances. But besides that, the casein in butter-milk exists in a different form from the casein of ordinary cow's milk, - (lactate of casein, or an isomeric state of casein?) - and can no longer be coagulated by acid or rennet. is here subtly divided, and therefore easily digested, and it cannot be converted into great lumps in the stomach. of administration is as follows: To a pint of butter-milk, add a Poonful of wheat flour, and boil for a few minutes; sweeten with ar. and give it to the infant in the bottle twice daily.

Temperature in Children. - Dr. Finlayson (Glasg. Med. Jour., E. 1869,) has observed that in healthy children there is invariably fall of temperature in the evening, amounting to 1°, 2°, or 3° F. This fall occurs especially between 7 and 9 p. m., and reaches the minimum before 2 a. m. It follows that a persistent evening rise of temperature in a child is the more significant, since in health there ought to be an evening fall.

Treatment of Phthisis.—Isnard, of Marseilles (Bull. There p. Dec. 1869,) recommends the administration of arsenious acid in phthisis, and says that under its use the development of tubercle is arrested, the hectic and sleeplessness diminished, and the general health improved. Monat, of Paris (Lancet, March 26, 1870,) recommends that this treatment should be adopted only in cases of circumscribed phthisis.

Dr. Weber has a paper in the Mcd. Chir. Trans., 1869, on the treatment of phthisis by prolonged residence in elevated regions.

Scurry.—Taylor (Lancet, June, 1870,) considers scurvy to be due to deficiency of albumen in the food, and he would give uncooked albumen as a remedy; and where salt provisions are used, he would administer binoxalate of potash to dissolve out more albumen from the meat.

Sun-stroke. — Dr. Smith, of New York, says that heat alone is not the cause of sun-stroke. There must be also a high dew-point, where little evaporation takes place. In India, sun-stroke has been treated of late by large doses of quinine, apparently with much success.

Influence of Chloroform in promoting cutaneous absorption.—Dr. Aug. Waller, of Geneva (Practitioner, Dec. 1869), has shown by numerous experiments on man and animals that chloroform solutions of the alkaloids (e. g. of atropine, strychnia, aconite, morphia, &c.) are quickly absorbed by the skin, and produce local and general results according to the substance employed; while alcoholic or aqueous solutions are either not at all or very slowly absorbed. It follows that in prescribing liniments containing these alkaloids, if we combine chloroform with them, it will render them more efficacious—a deduction which agrees with practical experience.

Chloroform and Morphia combined.—Bernard and others have been investigating the combined action of chloroform and morphia. It is found that the subcutaneous injection of morphia leads to less chloroform being required to produce insensibility, and is also a safe means of prolonging the effects of chloroform.

Mr. Wheelhouse, of Leeds, says (Brit. Med. Jour. 25th Dec. 1869), "Besides giving our patients, about to receive chloroform,"

dose of brandy before coming into the operating room, we often, especially if they are nervous about it, and sometimes even when taking it if they are excited, administer one sixth of a grain of morphia by hypodermic injection, and with most marked advantage."

Apomorphia—the new emetic—is morphia from which one atom of water has been removed. It is a white powder, soluble in water. One fifteenth of a grain injected under the skin produces vomiting in about ten minutes. This effect is produced suddenly and with little subsequent depression. It is much superior to the old emetics but unfortunately is very costly. (Brit. Med. Jour. 26th Feb. 1870).

Subcutaneous injection of Morphia.—Dr. C. Allbutt, of Leeds, recommends this treatment, in the advanced stages of heart disease, and mys that "no matter how swollen the limbs, no matter how agriated the pulse, no matter how blue and turgid the face and lips, he never hesitates to inject morphia, and gives great relief by doing so." Probably the use of chloral will remove the need of this mode of treatment, which is one that can hardly fail to shorten the life of the patient.

Dr. Wilson gives the following rules for the subcutaneous use of morphia. 1. The solvent for the morphia should be distilled water with no acid. 2. The initial dose should be smaller than usual. 3. The injection should be performed slowly.

Nitrite of Amyl in Angina Pectoris.—Nitrite of Amyl is a volatile liquid. When a few drops of it are inhaled through the nostrils, flushing of the face is produced and a feeling of fulness in the head, and at the same time the pulse is increased in body. Coording to some these signs show it to be an energetic stimulant the heart, but its action seems rather to be that of paralysing the capillaries. Dr. Brunton and others have employed it in angina pectoris, to which it generally gives instantaneous relief. Lancet, i. 1867; Med. Times, i. 1870; Brit. Med. Jour. Feb. 1870; Edin. Med. Jour. July 1870).

Digitalis in Heart-disease.—Lorain (Journal Anat. April, 1870,) has proved that digitalis in moderate doses restores the force of the heart, and renders its action slow and regular; but

that, if given in excessive quantities or too long, it demaction of the heart and causes irregularity of the pulse.

Dr. S. Ringer (Practitioner, Jan. 1870,) points out that is most useful in dropsy and other sequelæ of hear depending on dilatation with hypertrophy of the left vents or without mitral regurgitation. He considers irregulari pulse as an important sign that digitalis is needed, and th weakness of the pulse, nor the existence of aortic regulari-indicate its use. He administers a teaspoonful infusion twice or thrice daily. On the other hand, digit no use in dropsy associated with hypertrophy of the right and dependent on emphysema; or in the symptoms ari disease of the aortic valve where the heart and pulse beat and without any intermissions.

Veratrum Viride. - Several observers have investig action of veratrum viride of late. (Pegaitaz, Lancet, No Oulmont, Pharm. Jour., Oct. 1869, &c.) The most in observations made on this drug are those of H. (Amer. Journal, Jan. 1870.) He investigated the the two alkaloids discovered by Bullock in 1867, and veratroidia—the one soluble in ether, the ot and found that viridia is entirely free from the irritant the intestinal canal, which has prevented the prepar veratrum from being much used in medicine. He finds direct sedative of the heart, and this independently of its a spinal motor depressant. Veratrum viride is especially in pneumonia, quickly diminishing the fever, redu temperature, diminishing the rapidity and strength pulse, and relieving the breathing. The vomiting and however, which it produces are a great obstacle to its ac tion; and should viridia be found to be free from th venience it will no doubt be largely used in medicine.

Antidote to Phosphorus.—Since phosphorus has of so widely used as a vermin destroyer, it has become a means of poisoning in man. Personne has found that t is an antidote to the poisonous action of phosphorus. H that it prevents the combustion of the phosphorus in t

which would deprive the blood of its oxygen. He has shown the success of this mode of treatment by experiments on animals that had been poisoned by phosphorus. Several cases also have been reported of human lives being saved by the exhibition of this remedy after a poisonous dose of phosphorus had been taken. For example, one person attempted suicide by means of the phosphorus in matches, but was saved by the quantity of turpentine which he drank with the intention of rendering his death more certain. It is said that the workmen in the manufacture of lucifers are saved from the effects of the vapour of phosphorus, by carrying an open vessel with turpentine round their necks.

Hydrate of Chloral.—As this volume contains the abstract of a paper read to the Liverpool Medical Society on this subject, it is unnecessary here to do more than refer to the most recent observations on chloral. First, as to its mode of action: Dr. A. Gamgee brings strong arguments against Liebreich's hypothesis that chloral is changed into chloroform in the blood. "No doubt," says Gamgee, "chloral is readily decomposed by free caustic alkalis, but the blood does not contain any of these. The alkalinity of the blood is due, chiefly to the alkaline phosphate of sodium, and, probably in part to bicarbonate of sodium. Now these do not decompose chloral at the temperature of the blood. Besides, the symptoms from chloral are not those which an equivalent quantity of chloroform would produce, either in quantity or kind." favour of Liebreich's views, it may be stated, that in a case of poisoning from chloral, which occurred in Liverpool, and an account of which has not yet been published, the odour of chloroform was most distinctly detected in the breath of the patient. It has been observed also that the action of the drug has sometimes been postponed for many hours, as if it required to undergo some change in the blood before producing its effect. In typhus, the the blood is more alkaline; and typhus patients have been observed to be specially susceptible of the effects of chloral. (Russell, Glas. Med. Jour.)

As to the mode of administration, Dr. Bence Jones (Med. Times, June 28, 1870,) states, that it acts much more rapidly when given in sugar and water than in mucilage; (the latter forms a most

nauseous mixture.) Bonchut says it is much more rapidly absorbed by the rectum than by the mouth. In the obstetric clinique at Berlin, it has been given in the form of an enema with mucilage, and proved very satisfactory in puerperal convulsions, in sleeplessness, and after operations.

As to its therapeutic uses, its great value in advanced phthisis has been established by Bennett (*Practitioner*, June, 1870); in rheumatic fever and gout, by Ogle and Bence Jones; in cancer, by Cooke; in delirium tremens, by G. W. Balfour; in typhus, by Russell; and in parturition, by Lambert. (*Edin. Med. Jour.* Ang. 1870.)

PERISCOPE OF SURGERY. By ROBERT HAMILTON, F.R.C.S., SURGEON TO THE SOUTHERN HOSPITAL.

"orsion of Arteries.—Mr. Bryant, in an excellent paper in the 's Hospital Reports, vol. xv., explains the actual effects of ion upon the different coats of vessels. He says that by the ion of an artery the inner coat is divided, and in some cases ed inwards, so as to form a complete valve, not unlike the ilunar valves of the heart; in other cases, the incurvature is so perfect, and does not prevent the passage of a small quantity ood; whilst in a third class of cases, the torsion produces a ral splitting of the internal coat, into the meshes of which the d entering becomes clotted, and thus forms a barrier to the pe of more blood, it being further protected by the twist in the nal coat.

- Humphry, of Cambridge, and Mr. Cooper Forster, two advocates of torsion as opposed to ligature of arteries, have contributed papers on the subject.
- r. Bryant, with whom Mr. Forster seems to agree, looks upon valvular incurvation of the inner coat as the chief means ted by nature for the arrest of hæmorrhage, and the twist in external coat as an all-important additional security. Dr. aphry, on the other hand, depends very little upon the reflection he internal coat, and looks to the complete twisting of the rnal coat for a firm support to be given to the column of blood. herefore recommends the twisting to be continued till the end ne vessel separates, and is in fact twisted off—coming away in corceps; while Mr. Bryant and Mr. Forster advocate three, or five rotations only of the forceps in the case of large ies, merely sufficient to overcome resistance. Where the ies are diseased, Mr. Bryant recommends even fewer rotations, ng found, in the case of the femoral artery, two rotations

sufficed to check hemorrhage. He has now used torsion for not two years at Guy's Hospital, in upwards of a hundred concluding, of the femoral 22, of the tibial 7, and of brachial 3. Mr. C. Forster bears similar testimony.

Ancurism.—Much has been written upon the subject of Ancu during the last few months. A variety of cases have been rela and the different methods of treating it freely canvassed.

Digital Compression.—Dr. Fischer gives the statistics of aneurisms treated in this way, of which 122 recovered. T were, of course, mainly aneurisms of the popliteal and bracarteries; and the space of time occupied to produce a permacessation of the pulsation in the tumour varied from six to hours. He cites the following advantages of digital over immental compression and deligation: that when employed alon has never caused death; that it supplies a greater number of c and fewer relapses; that it is more simple and more reapplied; and that it occasions less pain.

Flexion.—Dr. Fischer also relates 57 cases of aneurism tre by flexion. These again were chiefly popliteal. The results not so favourable; this method failing in 29 instances. length of time in which it was used varied considerably, nar from six and eight hours to two months. Mr. Erichsen relate the British Medical Journal, a very interesting case of aneu of the profunda femoris artery, in which Carte's Compresson applied to the common femoral for twelve hours, the pasleeping heavily and deeply during all that time, from the end of 40 grains of chloral. During the next twelve hours discompression was used. At the end of this time all pulse had ceased, and a good cure was effected.

Mr. Barnard Holt relates a case of popliteal aneurism, at Westminster Hospital, cured in sixteen hours by digital compsion; and Mr. Pearse, at the same hospital, treated another pawith popliteal ancurism, who was cured by compression; but this instance, by means of Signorini's tourniquet applied to femoral artery over the pubes, and a ring tourniquet over Humanal. Alternate pressure from these was kept up for several d

But compression has its dangers and its failures. M. Letiévant relates a case of popliteal aneurism, at the Hotel Dieu, in which compression, by an apparatus fixed on the femoral artery, and persevered in during six days, for an hour at a time, led to symptoms of pyæmia on the eighth day, of which the patient died on the twelfth day. It has always been supposed that aneurism of the popliteal artery offers the most favourable conditions for effecting a cure by compression, but, to show its uncertainty, a case, under the care of Mr. Erichsen, is related in a recent number of the Lancet. The patient had a popliteal aneurism, about the size of a small orange, in the middle of the right ham; Carte's tourniquet was applied to the external iliac and to the femoral arteries, pressure being kept up on these alternately. This was continued for forty-eight hours,—the artery being well compressed for the latter half of the time, so as to control all pulsation in the aneurism. At the end of that time, the compression had to be removed, owing to the restlessness of the patient. No perceptible change had occurred, and digital compression was at once commenced, and kept up most carefully for twelve hours. compressors were resumed, and pressure steadily maintained for six days. No diminution in the pulsation ensued, and a weight compressor of 12 lbs. was adjusted. For nearly a month this treatment was persevered in, without any consolidation of the tumour taking place. Forcible flexion was now had recourse to, but with no better result. Complete compression under chloroform for twelve hours was then tried, but no material change ensued. Lastly, ligature of the superficial femoral was resorted to, and with complete success. For eighty-seven days had compression, in all its forms, been perseveringly applied previous to tying the artery. We record this case thus fully, because it illustrates what has happened in the practice of many hospital surgeons—the complete failure of compression in numerous instances. To some, it has happened so frequently that they have given up trying compression. as involving a loss of time, and placing the patient in a worse condition for deligation.

Ligature.—An interesting case of popliteal aneurism, under the care of Mr. Atchley, at the Bristol General Hospital, is recorded,

in which the catgut ligature was applied to the superficial femora and cut short. The patient did well; the wound healed in about three weeks without the ligature coming away. At the Brist-Royal Infirmary a very ingenious method was had recourse to f stopping the circulation in the femoral artery, in a patient having a popliteal aneurism. In this instance, forcible flexion, compres sion by tourniquets, and forcible extension had all been unsuc. cessful. Mr. Pritchard, after having cut down upon the femoral artery in the usual manner, applied a little instrument which he got made for the purpose. It was merely a hollow metal tube, three inches in length, in the form of a cross, having a bore equal to that of a No. 8 catheter. To the cross-bar he tied firmly one end of the ligature, the other end he passed through the tube from the upper extremity, and afterwards, by means of an aneurism needle, passed the free end of the ligature under the artery, and then threaded it again through the tube from below. By pulling the ligature sufficiently tight the artery was occluded, and the end of the ligature was then fastened to the cross-bar. In seventy two hours he removed the tube and ligature, by cutting the end of the latter and withdrawing them from beneath the artery. N pulsation could be felt in the tumour, and the wound heale This case is one of great interest, and certainly suggest the advisability of trying the same method in other aneurism occurring nearer the centre of the circulation, because it offers th opportunity of re-establishing the circulation, if alarming symptom arise from its complete suspension.

Mr. Christopher Heath relates the post-mortem appearances in patient, who died four years after he had tied the right carotid and the right subclavian arteries, for supposed aneurism of the innominate. After her dismissal from the hospital cured, the patientled a very irregular life, and a few months before her death was re-admitted into the Westminster Hospital, suffering from constant pain in the tumour, which had begun again to increase in size. It continued to do so until the skin became involved and discoloured and a month before her death arterial bleeding occurred from large ecchymosis over the tumour. This was checked for a time but successive returns of hemorrhage at last carried her off.

the autopsy, the innominate artery was found to be healthy; the arch of the aorta was extensively aneurismal. Immediately above the pulmonary artery the aorta was dilated, and presented a double pouch to the right side. Above this, but not involving the origin of the innominate, was the origin of the sac of the aneurism, which had burst through the sternum. The subclavian artery was reduced to a fibrous cord, and the right common carotid was wholly obliterated. Mr. Heath considers that this case raises a very important question, whether, in cases of aneurism of the arch of the aorta, it is not possible to afford relief by surgical interference: whether, when the disease involves the transverse position of the arch, tying the left carotid, and when the disease involves the ascending portion of the arch, tying both the right carotid and right subclavian, would not afford the only hope of retarding the progress of the disease. He considers his patient's life to have been prolonged by the double ligature at the distal side of the aneurism, under the most untoward circumstances.

Another death from aneurism is recorded by Dr. W. Murray, of The patient, six years before, was treated by compres-Newcastle. sion for abdominal aneurism. The case was related at the time in a paper read before the Royal Medical and Chirurgical Society The man, aged 26, was of spare habit, a pavior by occupation, having all the physical signs of abdominal aortic aneurism,—a hard, distinctly globular tumour could be felt oposite the umbilicus. which pulsated strongly. On the 19th of April, the patient being fully under the influence of chloroform, pressure, by means of the tourniquet, was begun, and kept up steadily for five hours with but momentary intermissions, and those even, during the last hour. were avoided. On the removal of the pressure very little pulsation existed in the tumour, and the same evening a careful examination failed to detect the slightest pulsation in the tumour, or in the aorta below it, or in the iliacs or femoral arteries. No untoward symptoms followed beyond numbness and coldness of the lower limbs, but these passed off and the patient recovered. His death occurred in June of the present year, and Dr. Murray states that the autopsy revealed occlusion of the aorta at the site of the aneurism, a remarkable development of the collateral vessels to toffows: That, contrary to the received belief, as not induce hypertrophy, or hypertrophy with heart, nor even of its left ventricle; that whealthy the aneurisms often appear not to exer on the heart as regards its size, form, or condimuscular structure of the left ventricle is frequen

Catheterism of the Larynx.—Dr. Weinlechne: long paper in the Gesellschaft der Aerzte, discus Catheterism of the Larynx. According to 1 catheterism of the larynx is, next to tracheotomy, to relieve the attacks of suffocation which occ diphtheria. It sometimes effects a cure, and more serious operation unnecessary. catheterism has to be repeated whenever the urgent. The process is conducted as follows: A with a funnel-shaped mouth-piece, has a piec catheter passed into it, the latter projecting some lower opening of the tube. The operator, arm patient's mouth being fixed open with a wedge duces his left index finger, which serves as a g into the mouth, and depresses the back of the with his right hand pushes forward the tube

of getting a tube into it through the mouth, and much more of retaining it there afterwards; but we have now had such independent testimony, from widely different sources, that its practicability in many cases can no longer be doubted. In 1855, Dr. Horace Green, of New York, published in the American Medical Monthly Journal, a series of papers on Sponging the Larvnx and Trachea, and related several cases in which he had introduced a tube several inches into the trachea, in the presence of a number of medical men. The statements are so precise, and the experiments resorted to, proving that the tube was really in the windpipe, were so satisfactory, that no reasonable doubt could be entertained. Dr. Green used a flexible tube, thirteen inches in length, and to its extremity he attached a sponge, of the same size as those ordinarily used for a throat-probang. The diameter of the tube is not given, but it must have been much larger than a No. 13 Gum Elastic Catheter. Amongst the cases of which Dr. Green gives particulars, is that of a lady, aged 32, in an advanced stage of phthisis; a large cavity existing at the apex of her left lung. On several previous occasions he had cauterised her larynx and trachea with a sponge soaked in a solution of nitrate of silver, and he proceeded next to a more daring feat. On October 13th, 1854, he passed an elastic tube through the trachea into the left bronchial division, and into this tube he injected, with a small glass syringe, one drachm of a solution of nitrate of silver, of the strength of forty grains to the ounce. No cough whatever, or any sense of suffocation, was produced by the operation. A few minutes afterwards, she felt a warm sensation in the upper part of the left lung. but no pain. The operation was repeated seven times during the course of the next fortnight, and with manifest benefit. ultimate result of the case is not told. Thirty-two other patients were treated in a similar way, with temporary relief at least; but the amount of permanent benefit seems doubtful. Probably this was the reason why the plan of treatment was not taken up, and followed out by others. We are not, therefore, at liberty to doubt Dr. Weinlechner's statements, and we certainly feel that though the operation must be attended with great difficulties, yet the class of cases, croup and diphtheria of children, in which he recommends

it, offer a better prospect of being benefited than do cases phthisis and bronchial affections, the latter being the only disci in which Dr. Green made use of it.

Excision of the Joints for disease, and especially excision of knee, hip and elbow, by Mr. Gant, Surgeon to the Royal I Hospital, was the subject of a paper read before the Royal Med and Chirurgical Society. The value of Mr. Gant's paper cons in the definition he gives of the conditions of disease appropr Thus, he lays down the rule that, in joint dise incurability by non-operative treatment may be said to exist, excision to be justifiable in all instances where the joint become functionally useless through destruction of the artic cartilages without the supervention of anchylosis, but with constitution sufficiently unimpaired to sustain the long proces reparative union required after excision,-averaging three mon All other cases of advanced local disease, accompanied by prolor hectic and exhaustion, must be submitted to amputation. cases are related; in sixteen, excision proved successful; re-exciin one, and three had to be secondarily amputated. None d With such favourable results, so different to the experience other operators, we can but conclude that, in all these cases, w under consideration previous to operative interference, it was n question of excision versus amputation, but one of excision ve let alone, for nature to effect the cure by anchylosis.

Writing on the same subject, but more particularly with regoto excision of the knee-joint, Mr. Bryant, after detailing a nun of instances of Articular Ostitis, Synovial Disease, Suppuration the Knee-joint, all under careful well-directed treatment, end in anchylosis with a useful limb, without operative interfered proceeds to discuss the merits of the two plans—excision amputation, where the one or the other is imperative. He cannot seem to favour the former mode of proceeding, and quantitatistics from Mr. Swain's Jacksonian Prize Essay, Dr. Hodge's work on Excision, both authors being warm accates of excision, to prove that the mortality from that operation much greater than from amputation in the same class of cases.

the proportion being 27 per cent. to 20 per cent. He then proceeds to contrast the striking results which ensue after both operations at different periods of life. From which it appears that it is in young adult life that excisions, although even then more fatal than amputations, are the most justifiable; that in childhood, they are far too dangerous, and in patients past middle age inapplicable.

Without questioning the latter deduction, the former seems open to doubt, namely that young adult life, which Mr. Bryant fixes between 21 and 40 years of age, is more favourable to excision than childhood, the latter reaching to 20 years of age. Now childhood, if we limit it between the ages of 10 and 20 years, has as far as our observation goes, always given by far the most favourable results are excision.

With the other portions of Mr. Bryant's conclusions we entirely tree. He says, "Are the advantages of excision so great as to justify a surgeon in submitting a patient to an extra risk in order to secure them? As hitherto practised, and as a general rule in surgery, I have no doubt in answering in the negative." . . . Our Present experience seems to show that if the operation is to be a successful, as well as a general one in surgery, it should be undertaken at a somewhat earlier period of the disease than that at which the question of amputation has to be mooted,—that it should be performed at a stage of the disease before surgical fever has reduced the powers of the patient.

The other recent writers on Excision of the Knee are Dr. Humphry, who relates 39 cases, of which 28 recovered and 9 underwent amputation afterwards, four of the latter died;—and M. Peniéres, whose work is chiefly statistical. He gives the results of 431 cases of resection, of which 300 recovered and 131 died. Of the 300 recoveries, 247 were cured without another operation, by secondary amputation, and 6 after re-excision. Of the deaths in 89 instances, 32 were from Pyæmia, 12 from Phthisis, from Exhaustion, and 13 from Hæmorrhage.

In connection with this subject of Excision of Joints, the pinion of M. Ollier on the regeneration of bone, and the more secont experiments of M. Baikow on the effects of the transplanta-

tion of the medulla, ought to be remembered and considere present there appears to be an antagonism in the views writers as to the mode of development of new bone. WI Ollier maintains that growth proceeds from the perioster Baikow would have us believe that the medulla is the main from which bone is developed. It is more than probable th are several centres of growth, and that both the periosteum. medulla are productive sources of certain elements which to make up the perfected osseous tissue. This fact seems bo by the cases of re-section of the elbow joint which Ollier ha laid before the Academy of Sciences of Paris. In consequ the deaths of the patients a year or two after the operation other causes, Ollier had an opportunity of examining the 1 In one case the head of the humerus had bee regularly regenerated, and an olecranon of one inch ha formed, whilst around the excised end of the radius scare new growth had taken place. In another case, the condyles humerus had been fairly reproduced, whilst the olecranon wa sented by a series of osseous nuclei lying in the tendon of the This seems to show that however carefully done,—and any c has witnessed M. Ollier perform these operations, which made his especial study, will bear witness to the great dewith which he dissects off the periosteum, a performance the hands of others generally proves most difficult,—ti still wanting something for the complete reproduction of the removed; and that, whatever exudation to be afterwards or; proceeds from the inner surface of the periosteum, there yet ing a certain amount of material to constitute bone in its en From whence is this to be derived? It is certainly more analogy, drawn from growth generally, to believe that it p from the centre; and, in the case of bone when healthy, the r would seem to be the inner life, the active source from which a ceaseless supply to replace the old and effete elements. remarkable experiments of Baikow were of two kinds. series he took the medulla from the femur and tibia of one d placed it under the skin of the back of another dog, with no bone not being formed. In another series, he placed the m

under the skin of the same dog from which he had taken it, and in several instances bony masses were actually formed in course of time, in periods varying from two to three months.

From the researches of M. Ollier and M. Baikow, we infer that in excision of joints, better results are more likely to follow in those instances where as much of the healthy periosteum is left as possible, and only the diseased bone gouged away, than in those cases where much healthy as well as diseased bone is removed by the saw.

Lithotomy and Lithotrity.—In an eminently practical paper on Lithotomy, in the Lancet for January, Sir William Fergusson discusses some points in this operation on which little stress has hitherto been laid. With regard to the prostate, he says that the healthy prostate, such as it may be considered between puberty and fifty years of age, has usually been taken as the standard of size. Yet, in two-thirds of the cases for this operation the prostate is either below or above the size thus indicated. years it is much below, and is no doubt cut or torn throughout in the operation. In advanced years, it may be doubted if it ever is either torn or divided entirely. In the ordinary lateral operation the knife, finger, and instruments pass through the parts where the enlargement is greatest, viz., the lateral lobe, and its firm, fibrous character can be readily felt; but sometimes the sensation is as if the finger glided through several rounded bodies in the substance of the gland which are but slenderly in contact with each other. When the stone is being extracted, and is within the grasp of the forceps, there is often considerable resistance, and if the operator looks carefully, on pushing the skin and margin of the wound a little aside, he will see some tissue or substance between the blades in the space between the hinge and the stone. This is in reality one or more of the lobules referred to. With a little trouble this glandular tissue can be pushed from between the blade. After repeated experience of this kind, Sir W. Fergusson doubted the propriety of leaving such loosened masses, and at last, on a tempting occasion, he was induced, after the extraction of the stone, to seize, and partly tear and partly cut them away. No evil followed, and his patient, seventy-five years old, made a good recovery. He has since followed the practice repeatedly, and has seen no reason to regret it. He therefore advises the surgeon, when operating for stone, to take away superfluous portions of prostate, when this is found to be much enlarged, because the patient's sufferings are often as much due to the enlarged gland as to the presence of a stone.

Lithotrity.—Sir Henry Thompson read a paper at the Royal Medical and Chirurgical Society, in May, being an analysis of 184 cases of stone in the bladder of the adult treated by Lithotrity, all after the same method and with the same instruments. The mean ages of the 184 cases was sixty-one years. The youngest was twenty-two, the oldest eighty-four years old. All stones of an ounce weight and upwards were reserved for lithotomy. obviously below that were crushed. The recoveries were 93 per cent. A second operation for recurrence of the stone was performed in thirteen of the 184 cases. The important logical conclusion to be derived from the mass of facts collected was, that lithotrity is an eminently successful operation. The author states that he has never lost a patient after crushing a stone which was no larger then a small nut. When it is employed for stones as large as a date or a small chestnut, a certain, but still only small, proportion of deaths must be expected, and the rate of mortality will correspond with augmentation in the size of the stone, and with the amount of existing disease and age of the patient.

These are important statements, coming from so high an authority, but still we are inclined to agree with some of the speakers who joined in the discussion which took place after the reading of the paper, that the atony of the bladder produced by the frequent introduction of instruments, and the great liability to a return of the disease, will prove drawbacks to the extensive adoption of lithotrity in the hands of surgeons generally, when the calculus is of any but the most moderate dimensions.

The Antiseptic System.—The basis of Professor Lister's method has not been rightly understood by many of those who

are opposed it. The remarks of the late Mr. Nunneley, at the feeting of the British Medical Association, at Leeds in 1869, as by attracted general attention, showed that his opposition to e system was in part due to mis-apprehension of the theory its completeness. He assumed that the whole process of estment resolved itself into this, that the air was full of ptic germs, that they gave rise to purulent infection when in ntact with an open wound, and that carbolic acid was a specific ainst them. Now, Mr. Lister has shown, in a recent pamphlet the subject, that it is not the mere frequent application of tholic acid which tends to the more rapid healing of a wound. e acid is but a subsidiary agent in his hands, being used in mbination with other means of paramount importance, all having their object the exclusion of every possible cause which might efere with a quick repair of tissue. In the first place, he shows # granulations are but the result of an interruption of cell wth; that the imperfect tissue of which they consist is ever posed to develop into higher forms as soon as it is left free n preternatural excitement. The granulations are still granuons,—that is to say, possess still the same pathological structure n covered by the pellicle of newly formed epidermis at the edge he sore as when they are exposed. But, no sooner does the of young epithelium protect the imperfect tissue from the lence of external stimuli than "the rudimentary structure of granulations immediately proceeds to develop into the more more perfect fibrous tissue of the cicatrix." But his argument issarily leads one further back than this; and we infer that e very granulations are but the indications of an already rrupted, and if we may use the term depraved, cell growth; and if, ab initio, the process set up for the repair of tissue met no counteracting forces, we should have the cells exuded at proceeding in their growth to the higher forms of tissue. re find in Mr. Lister's paper very little said about septic germs ing in the atmosphere as the great cause of suppuration and non-healing of wounds. The chief point of his argument lies he stress he lays upon the necessity of bringing the injured

s into a condition to be wholly uninterfered with by all

... pure or a ce

carbolic acid, forms the protective. This can and when required is dipped in a watery previous to applying it. Of all those who use Mr. Lister maintains that he applies them wound the least frequently, and when he exclude putrefaction, he also uses a prote carbolic acid, believing that their joint action from abnormal stimulus.

This modification of the antiseptic system to test its truth. Of all classes of cases in dressing has been used, the least successful a large amputations. The various reports whic on the subject, whilst recording remarkab. without suppuration, refer to cases either of c to wounds, or resections, or to the opening of in vain for an amputation showing equally god The records of the Southern Hospita We have had an unusual number statement. during the last six months, all of which have t on the antiseptic plan, yet there has not l suppuration, that quick union of flaps, which v from the good results we have found in other have done so wall and I

antiseptic treatment, believing it rather delayed the cicatrisation of the granulating surface.

The last subject we must notice is the healing of wounds by transplantation of skin, or, as it has been somewhat sensationally called, Skin-Grafting.

Mr. George Pollock has been conducting a series of experiments at St. George's Hospital, for the purpose of testing the value of this suggestion of M. Reverdin, an Interne of one of the Paris Hospitals. Mr. Pollock's first experiment was upon a child having an extensive ulcerated surface on the thigh, the result of a burn, which had been long in a stationary condition, showing no progress towards cicatrisation. Mr. Pollock took two small pieces from the child's own skin, of the size of millet seeds, and placed them in the centre of the granulations, having first made an incision in the latter, and covered them with plaster. At the end of a week nothing was to be seen, but in about a fortnight two small isolated spots of cicatrisation could be detected at the points where the skin had been imbedded. These continued to increase, and in the course of the last few weeks had grown and bridged over the greater part of the ulcer.

More recently, Mr. Mason has tried at the Westminster Hospital the same plan in a case of cicatrix of the neck from a burn, first dividing the cicatrix freely and exposing two large raw surfaces. This case still remains to be reported upon. We have, however, a successful one related by M. Sein, in which several epidermic shreds were applied by M. Reverdin to a large lacerated wound of the arm, in which a great portion of the skin had been destroyed. Here several islets made their appearance after a time in the places where the engrafted skin had been placed and extended themselves in all directions.

We wait, however, for more extended trials of this new feat in Surgery before commenting upon it.

WOMEN.

By Dr. A. B STEELE,

Dysmenorrhoea from retroflection. — Dr. Enthe practice of incising the anterior lip. The rarely exists for any length of time without perimetritis or pelvic cellulitis; hence adhesic in such cases often be restored by gradual antions by a finger in the rectum, the adhesions American Journal of Obstetrics, 1869.

Examination of the Rectum.—Dr. Storer de as well as for treatment the use of the anal that "by everting the rectum by passing t vagina, we are able to explore the rectal cavity than by any other means, and to apply reoperations with an ease, safety, and satisfactic possible."—American Journal of Obstetrics,

Chronic Uterine Catarrh.—Dr. W. S. I swabbing out the interior of the uterine cavity solution of carbolic acid, by means of cotton round a flexible probe of metal or whalebetreatment uniformly successful, and had not

metrorrhæs depending upon a relaxed condition of the mucous membrane.—A. B. S.

Vomiting of Pregnancy.—Mr. E. Garraway finds drop doses of the crystallised carbolic acid, liquefied by heat and diffused in half an ounce of mucilage, very efficacious in this and other forms of sympathetic vomiting.—Brit. Med. Jour., March, 1869.

Styptic Colloid in ulceration of the os uteri.—Dr. Wynne, of Guatemala, reports the case of a lady who had suffered from induration and ulceration of the cervix for nearly seven years, in which, after the usual remedies had failed, the application of Dr. Richardson's Styptic Colloid had the effect of healing the ulcer, and sensibly diminishing the induration of the surrounding tissues in less than a month. In several other cases of ulceration of the os uteri he found that a cure was effected by the Styptic Colloid, with greater facility and in about one half the time usually required by other modes of treatment.—Obstet. Transact., London, vol. xi.

We have obtained very satisfactory results from the Styptic Colloid in superficial ulceration or erosion of the cervix; in the deeper forms of ulceration we prefer chromic acid, the favourite caustic of Marion Sims. — A. B. S.

Ovariotomy. — Treatment of the Pedicle.—Dr. Marion Sims tells us, that for more than twenty years he has taught that the best plan of dealing with the pedicle is to secure it with silver wire ligatures and drop it into the pelvic cavity. If the pedicle be small, a double silver wire, securing the two halves by twisting the wires on opposite sides, is sufficient. If broad, it requires a number of separate wires according to its width. He relates a case in which three wires were used, each enclosing a segment of tissue about an inch wide, "the patient was convalescent from the moment of the operation."—Brit. Med. Jour., April, 1869.

Tapping in Ovarian Disease. — Mr. Southam (Manchester) considers that, by tapping, life may frequently be prolonged, and the success of subsequent ovariotomy not only not interfered with, but actually promoted. He relates three cases, showing that it is sometimes followed by such favourable results that it might be regarded almost in the light of a curative agent. In

to be used, with a stop-cock to which is attach elastic tubing, which, acting on the principle of th all air from the cyst; the fluid is removed very skemade upon the abdomen.—Brit. Med. Jour., Oc

Mr. Spencer Wells gives the following conclus of his own observation:—

- "1. That one or more tappings do not con the mortality of Ovariotomy;
- "2. That tapping may often be a useful preluceither by giving time for the general health t lessening shock when the fluid is removed a febefore removing the more solid part of an ovarian
- "8. That when the syphon-trocar is used in a to prevent escape of ovarian fluid into the periton entrance of air into the cyst, the danger of small."—Lancet, 1869.
- Dr. T. Gaillard Thomas (New York), in details in nine cases of ovariotomy, says, "In avoidin committed a grave error. A more frequent resort cleared up many obscurities as to diagnosis, and resort being had to ovariotomy in at least one of My experience thus far will induce me in futur much more generally than I have done in the past

Mr. Heath (Newcastle-on-Tyne) observes that ovariotomy "is most likely to have a favourable termination where the wound in the abdominal parietes is small, four inches or less in length; where the time occupied is comparatively short; where the abdominal cavity and its contents have been little exposed to the air; and where in particular neither blood nor other fluids have entered in any quantity, or remain in the abdominal cavity. Ligatures, whose material seems almost a matter of indifference,—wire, catgut, or hemp,—may remain with impunity, but not blood, at least in any quantity."—Address in Surgery, 1870, Brit. Med. Jour., Aug.

Relaxation of the Pelvic Symphyses during pregnancy and parturition.—Dr. Snelling (New York) gives the history of several well marked instances, of this affection, characterised by vague pairs in the pelvis, and more or less interference with locomotion; in one case the movement of the pubic bones was distinctly let one upon the other to the extent of an inch or more. Rest in the recumbent posture, and a girdle or bandage applied firmly round the pelvis, was found to effect a cure in a few weeks.—Amer. Jour. Obst.. Feb. 1870.

Untoward accident in amputation of the cervix uteri.—Dr. Alfred Meadows, with an honourable courage and candour, which elicited the warm commendation of the Fellows of the Obstetrical society, related a case where, in amputating an elongated and rotruding virgin cervix, a piece of the bladder in front, and a ortion of the peritoneum from Douglas' pouch behind, were cluded in the action of the ecraseur, giving rise to serious stitutional disturbance, and producing a vesico-vaginal fistula. Meadows subsequently operated successfully for the fistula, and the patient was completely cured.

Dr. Marion Sims, in his work on uterine surgery, records two mamples of the same accident, one occurring in his own practice, and another in the hands of a very accomplished accoucheur in New York.—Obstet. Trans., Lond. 1870.

Electricity in Diseases of Women.—Dr. Althaus tells us that very form of electricity has an almost specific stimulating influence upon the vasomotor nerves of the ovaries and uterus.

Hence its value "as an emmenagogue, especially where t menstrual function has not yet been fully established in conquence of a torpid state of these nerves;" also, "when the catamenia have been lost, after labour, or from shock, cold, or mental anxiety." The form he recommends is faradisation of the womb by the application of one electrode to the abdominal pariete and the other to the lumbar spine. "In many cases the catamenas are brought on whatever part of the body may have been faradised."

Dr. Althaus recommends a more "extended use of faradisation to obstetric physicians, especially in chronic metritis, enlargement of the uterus without inflammation from non-involution, and even in displacement of the womb."—Treatise on Medical Electricity, Lond. 1870.

Uterine Hæmorrhage. — Dr. Barnes insists on the necessity for caution in the application of cold; it is not to be trusted unless quickly successful in exciting uterine contraction; unless there is sufficient power to respond to the excitation cold will do harm instead of good. He questions the safety of injecting cold water into the uterus, prefering Levret's plan of placing a lump of ice in the uterus. — Lect. on Obstetric Operations, Churchill, Lond., 1870, pp. 476, 477.

In post partum hæmorrhage, where the nerve force is so far exhausted as to fail to respond to the excitation of the ordinary remedies, a new power is necessary, and this is found in the perchloride of iron, which coagulates the blood in the mouths of the open vessels and corrugates the inner surface of the uterus. Four ounces of the strong solution of the British Pharmacopeia, with eight to twelve ounces of water, are to be injected by means of Higginson's Syringe, with a uterine tube attached, the tube being passed until the point touches the fundus, and the fluid slowly and gradually thrown up so as to trickle over the inner surface of the uterus.

In cases of abortion, or in non-pregnant women, where the uterus is small and the cervix imperfectly open, it is sufficient to swab out the interior of the uterus with a sponge saturated with the perchloride.

The same author lays down the proposition, "that in all cases of flooding sufficient to cause anxiety before labour, the puncture of the membranes is the first thing to be done;" at the same time a firm binder is to be applied over the uterus;—if the hæmorrhage continues, the os uteri itself is to be plugged with a solid smooth piece of laminaria, about four inches long, the calibre of a No. 8 or No. 9 bougie, with a slight curvature at the end. Plugging the vagina is unscientific and illusory. If further dilatation is required the hydrostatic dilators are to be used.

He points out one source of hæmorrhage after labour, which is not sufficiently recognised, namely, lesion of the cervix uteri, the bleeding from which persists even when the uterus is well contracted. The remedy is to apply a powerful styptic, e. g. the perchloride of iron, to the bleeding surface. — Op. Cit., p. 510.

Dr. D. W. Parsons, of this town, related to the reporter a case of profuse post partum hæmorrhage, in which, when all ordinary means had failed and death appeared imminent, he had recourse, as a dernier resort, to manual compression of the aorta through the parietes of the uterus, which at once arrested the bleeding, and saved the patient.—A. B. S.

Dr. Graily Hewitt draws attention to one particular cause of post partum hæmorrhage which has escaped the attention of obstetric writers and practitioners, namely, peritoneal adhesions of the gravid uterus, whereby the organ, after the expulsion of the child, is held and forcibly restrained in a distended condition, entirely or partially preventing that contraction of the uterus which is so essential both to the expulsion of the placenta and the prevention of post partum hæmorrhage. — Obst. Trans., London, 1870,

Rigidity of the Os Uteri.—Dr. Milne believes he has found in the hydrochlorate of apomorphia "a uterine relaxant—the antipodes of ergot"—which will "effectually throw open the door of the uterus in extreme cases." He gives a case in which $\frac{1}{4}$ of a grain of the apomorphia succeeded in producing immediate full dilatation of the os, after the failure of the ordinary means.— $Edin.\ Med.\ Jour.$, Jan. 1869.

Dr. Barnes strongly advocates irrigation of the cervix and

vagina with a stream of tepid water, by means of Higginson's syringe, to be continued for ten or fifteen minutes at a time, and repeated after an equal interval.—Barnes on Obstetric Operations. Churchill, London, 1870, p. 105.

Unique case of Dystochia.—Dr. Rogers relates a case in which immense difficulty occurred in completing delivery after the expulsion of the head, from a condition of the feetus which he believes to be rare, if not unique; the chest and abdomen were both perforated, and the mutilated body of the feetus extracted by prolonged and strong traction. The obstruction was discovered to have been caused by two large tumours, consisting of the undescended testes of the child, occupied by cystic disease. One of the tumours had escaped into the cavity of the uterus during the process of delivery, and was extracted with the placenta, the other was found in the abdomen of the feetus after birth. It was not until the extrusion of the first tumour from the belly of the feetus, that its passage through the pelvis was possible.—London Hospital Reports, 1870.

Cephalotripsy. — Dr. Barnes showed the head of a child delivered by Hicks' cephalotribe; the mother was deformed and ricketty, the conjugate diameter was estimated at 1.25 to 1.50 inch; the smallest pelvis he believed in which cephalotripsy had ever been performed successfully in this country. The operation lasted one hour. The mother did well. — Obstetric Trans., London, 1870.

A new mode of Embryotomy. — This consists in the use of Weiss' wire conserved to cut in pieces by successive slices the head and body of the child, in cases of extreme deformity, suggested by Dr. Barnes. — Ibid.

Puerperal Convulsions.—Dr. Angus Macdonald (Edinburg 1) relates to the Obstetrical Society a case of puerperal eclampsis of a severe type, treated by blood-letting, chloroform, and early delivery by turning, with success to both mother and child. In the discussion which follows there is a unanimous expression of opinion in favour of blood-letting in this disease.—Edin. Med. Jour., Feb. 1870.

Dr. Elliot (America) relics chiefly upon chloroform and the speedy termination of labour; taking blood, however, moderately in the majority of cases by cupping, rarely by venesection. — Dublin Quarterly Journal, Feb. 1870.

Mr. Melland (Manchester) records nine cases of eclampsia, of which seven recovered, two died, one from apoplectic effusion, one after six days from metritis; albuminuria existed in two cases only. In all he delivered as soon as the os uteri was sufficiently dilated, in six with forceps. Chloroform was used in several of the cases, with the effect of lessening the severity, but without entirely controlling the severity of the paroxyms. He is strongly in favour of early venesection. — Brit. Med. Jour., Jan. 1870.

Dr. Wallace (Liverpool) advocates, in all cases of elcampsia, manual dilatation of the os uteri and speedy delivery. The treatment to be successful must be adopted immediately, as the uramic endition speedily proves fatal, first to the child, and then to the mother. He gives six cases, with the result of six living mothers and four living children.—Ibid., Sep. 18, 1869.

Mr. Lawrie (Bradford) reports one case treated by chloroform, elaterium enemata, and early delivery, with success to both mother and child; a second in which the convulsions occurred at the seventh month, and were cured by chloroform, extreme purging, and diuresis. "The patient was out in ten days, and delivered of a dead child at the end of the eighth month." Mr. Lawrie considers elimination, by extreme purgation, preferably by enemata, safer and more curative than bleeding, and the free administration of an anæsthetic to be indispensable.— Ibid., March 19, 1870.

Drs. Dobie and Ramsay relate a case in which convulsions had continued for many hours, and where, after perforation of the nembranes and the escape of an immense quantity of liq. amnii, he paroxysms at once diminished in force and frequency, and in the hours entirely ceased. Labour set in twenty-two hours after the evacuation of the waters, and was completed in nine hours. The child was dead. No further convulsions occurred. Here the evacuation of the waters, by reducing the bulk of the uterus, lessened the pressure on the venous trunks, and allowed them to resume their excretory functions.—Ibid., Jan. 1870.

The confliction of opinion as to the efficacy of particular remedies in puerperal eclampsis seems to illustrate the soundness

of the view for which we have always contended, namely, that treatment of this disease should be founded on the purest eck cism; regarding eclampsia as a lesion of the true spinal syst associated with conditions and resulting from causes of a vary and often of a directly opposite character, our remedies should so chosen as to meet the special indications present in each can active depletion and free evacuation are as imperatively can for in some cases, as they are strictly to be avoided in oth Speedy delivery may be urgently demanded, or the sligh interference with the course of labour strictly forbidden, accord to the phase of the disease and the surrounding conditions of system.—A. B. S.

Induction of Premature Labour.—Mr. E. Garraway induction at seven months and a half by the injection of a pint a half of warm water into the uterus, through a silver catheter passwell up, and swayed to and fro between the cervix and membras In an hour there was rigor, vomiting, pain, and escape of amnii; in six hours the head was on the perinceum, and in anothelivery was accomplished.—Brit. Med. Jour., Feb. 1870.

Professor Lazarewitch, of Prussia, advocates this mode of preceding, and records twelve cases, eleven of which were favoura. The fatal issue in the one case was not due to the operation.

The weight of opinion amongst British obstetricians is again this mode of inducing premature labour. The late Sir Jan Simpson relates more than one fatal case, and Dr. Greenham nearly lost a patient thus treated.—A. B. S.

Dr. Barnes prefers a proceeding "equally certain and sa viz., progressive dilatation of the os uteri by the hydrostatic by—Barnes on Obstetric Operations, 1870.

Puerperal Mortality.—Dr. J. Matthews Duncan challenges correctness of the proposition laid down by Dr. Evory Kenne "that the generation and absorption of this contagion (puerp metria) is in a direct proportion to the number of partur females cohabiting in a given number of feet of atmospheric stat their parturient period, or who breathe the same atmosph when lying-in."

Dr. Duncan shows, that "the tables of mortality amongst

immates of the Dublin Lying-in Hospital, for the one hundred and eleven years from 1757 to 1868, prove, that the mortality does not increase with the increased number of inmates; does not rise with the aggregation; the mortality is neither in the direct nor in the inverse ratio of the aggregation. The figures seem to favour the riew that the hospital is a better and safer institution, the greater the aggregation. Certainly a smaller number die when there are many in it, than when there are fewer. It is plain we cannot look to aggregation as an important cause of mortality in the Dublin Hospital. This is a great practical result; for it sets capting into other directions to find out the hidden sources of increased mortality."—Edin. Med. Jour., 1870.

The special correspondent of the Medical Times and Gazette for impool gives a summary of lying-in cases at the Liverpool withouse Hospital, for two years, 1868, 1869, of which the living is an abstract:—

	1868	1869	Total.
Births	515	444	959
Maternal deaths	2	2	4
Still births	79	58	137
Primiparæ, included in the abo	ve 223	307	530

This exceptionally low mortality is the more remarkable, from he fact that a large proportion of the cases were illegitimate births, and all of them subject to the unfavourable influences of pauserism.—Med. Times and Gazette, Feb. 1870.

Dr. Braxton Hicks, in an elaborate paper on Puerperal Disease, shows that in eighty-six cases, occurring after simple labour in Private practice, more than three-fourths of the patients had been exposed to some kind of animal poison; in thirty-six cases, to that of scarlet fever.—Lancet, Feb. 1870.

Dr. Beatty is "forced to the conclusion that what is called neerperal fever is not a distinct zymotic disease, but is only a form ferysipelas exhibited in puerperal women."—Obs. On Cause and revention of Puerperal Fever, Dublin, 1869.

On the Muscular Forces employed in Parturition; their amous and mode of application. By the Rev. Samuel Haughton, M.I Dublin. Dub. Quart. Jour., May, 1870.

The object of this paper is to show, by a series of mathematic calculations and algebraic formulæ, that "the uterine muscles a sufficient, and not much more than sufficient, to complete the fir stage of labour, and that they do not possess an amount of for adequate to rupture, in any case, the uterine wall itself. * * The amount of available additional force given out by the abdoming muscles admits of calculation, and will be found much greate than the force produced by the involuntary contractions of the womb itself." He estimates that, "on an emergency, somewhat more than a quarter of a ton pressure can be brought to bear upor a refractory child that refuses to come into the world in the usual From this theory the Dublin Professor argues, the "when chloroform is used in parturition, beyond the stage st which it produces simple drunkenness and indifference to pain, is positively injurious; for it destroys the action of the voluntary abdominal muscles which constitute the chief part of the form employed in difficult labours. * The result is, the labour ceases until consciousness returns, and enables the ill treated woman to avail herself of the apparatus of abdomins muscles provided by nature for her use."

We will not venture to dispute the accuracy of the reveren doctor's formulæ, which appear, however, to carry us back the "obstetrico-mathematical school of Levret," who held the l'accouchement est une opération naturelle, véritablement méchanique et susceptible de démonstration géométrique; but we can affirm, as an observed fact, that anæsthesia, even in the surgical degree, does not constantly, nor indeed in our experient usually, "destroy the action of the voluntary abdominal muscles. This action, although belonging to the voluntary muscles und the conditions stated, is purely reflex, and scarcely, if at all, modependent on the will than the contraction of the uterus itself.-A. B. S.

Ovarian Tumour complicating Labour.—Dr. Kidd relates a cs in which labour was obstructed by a hard, solid, immoval

placed in the position described by Thomas for reduction of prolapsed funis; the largest of Barnes' bags was pressed into the rectum, and gradually distended with air; a finger was pressed upon the tumour per vaginam, which gradually moved as the bag was distended. When it was full, a sudden push caused the tamour to disappear with a jerk. In a few hours a fine living child was born, and the mother recovered well. Dr. Kidd lays it down as a rule that, "in all cases of labour obstructed by a tamour in the pelvis, our first duty is to raise the tumour, if possible, out of the way." He thinks there are "good grounds for insitating, either to induce premature labour, as recommended by A. Barnes, or to tap, as recommended by Mr. Spencer Wells, unless the be special reasons calling for interference."—Dub. Quart.

Paracentesis Uteri.—Dr. Head reports a case in which the left lumbar region. Attempts to replace the organ lawing failed, a trocar was passed into the uterus through the large quantity of liq. amnii came away. The fœtus and placenta were expelled the next day, and, although the symptoms for some time were very alarming, the patient eventually completely recovered.—Lond. Hosp. Reports, vol. iv.

Fatal Hæmorrhage.—Mr. Hyde Houghton relates a case of hæmorrhage fatal in forty minutes. The woman, aged 45, in the eighth month of her sixteenth pregnancy, suddenly slipped off a chair to the ground. Profuse hæmorrhage from the vagina at once occurred, and she died before assistance could reach her. On post-mortem inspection, the uterus was healthy, the membranes entire, placenta attached near the fundus. No coagulum or trace of blood was found in the uterus; the os was occupied by the plug of nucus. The only indication of escape of blood was a thin layer gluing the labia together. Death was attributed to the rupture of warix.—Brit. Med. Jour., April, 1869.

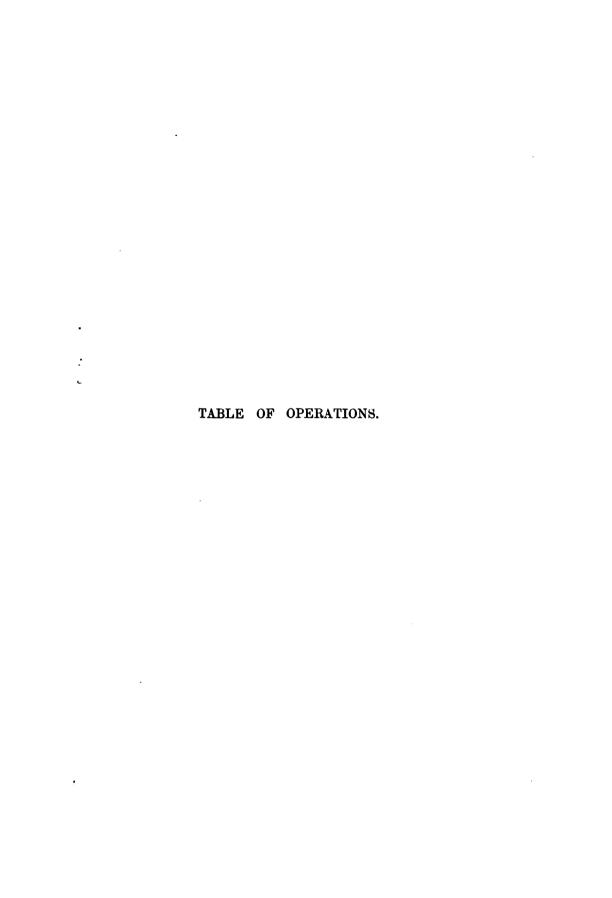
Fatal hæmorrhage, during pregnancy, unconnected with the uterus is rare, and, under certain circumstances, may involve important medico-legal questions. An instance of this recently

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came under our notice. A woman far advanced in pregnancy, living apart from her husband, had been walking with her paramour, the reputed father of the child then in utero; and immediately on reaching her house, she was seen to fall down and expire in a few minutes. The first surgeon who could be obtained found her lying dead in a pool of blood, which had issued from the vagina. The post mortem appearances detailed before the coroner were similar to those in the former case, and in the absence of any evidence of a quarrel between the parties, or marks of violence on the body, a verdict of natural causes was returned.—A.B.S.

Management of the Umbilical Cord.—Mr. Thompson (Bellingham) considered "that deligation of the umbilical cord at parturition was a physiological error. It was his practice not to apply any ligature, and he never had any hamorrhage."—Brit. Med. Jour., 1870.

We have heard that this practice has been adopted by at least one other practitioner; it is worthy of remark that in new-born children found dead from exposure or evident violence, the cord is generally untied, and yet there are no indications of hæmorrhags. Is it necessary to divide the cord by a process more or less calculated to effect torsion of the vessels?—A. B. S.



TABULAR VIEW OF THE MAJOR OPERATIONS PERFORMED A1 LIVERPOOL, DURING

-						ROYAL INFIRMART.		NORTHERN HONDITAL.		Bots Hosp	
						Record.	Dwd.	Becord.	Dird.	Lecord	
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#	elbow joint	{ primary secondary			••	1 10	i	2		'i	
	wrist joint				••	3		!		1	
	ankle joint	{ primary secondary		••	••		1;			'i	
	hip joint				••	3					
"	knee joint				••	ø	1+	1			
	ortion of the	•	••	• •	••	2	••	:			
" th	os uteri and	l plastic opera	tion	••	••	1 1	••	· · ·	••	••	
Amputation th	rough the sho	oulder joint $\left\{ ight.$	primary secondar disease	7	for }	; į 1	1•	! 	 	••	
" of t	he arm $\begin{cases} \mathbf{pr} \\ \mathbf{se} \end{cases}$	imary condary (for d		•		1†	1 1		1* 	3	
	" seco	ndary (for inj	ury)		••			٠	2†		
" of ti	e forearm	$\mathbf{primary}$ \mathbf{for}	disease injury			2 3 1 2	••	7 'i	1† 	::	
et.		primary secondary	::			! 	••	.: '	••	.:	
" thr	ough the hip	joint, seconds	ury (for d	lisca	se)	! ¦	1	· · ·	••		
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" thro	ugh the knee	primary secondary	for diseas for injury	 50 7••		8		1	: 1;		
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<i>64</i> B	foot {	primary secondary { fo	r disease r injury	::	 	is 1	2+ 	2	`i•	1 ::	
* N	penis					4	1	 	••	••	
Excision of the	tongue		••		••				••		

[•] Died from Exhaustion. + Died from Pyonnia. | Died from Ga

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AL INFIRMARY, NORTHERN, AND SOUTHERN HOSPITALS IN RS 1868 AND 1869.

							HOYAL INFIRMARY.		NORTHERN HOSPITAL.		Bortuers Hospital.	
							Rerovd.	Died.	Record.	Died	Renad.	Died
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stion of the carotid artery (for aneurism)									**		**	
P 11		rtery)	**		1		**		**
er er	brachial	99	(for in	jury)	* *	**	1		••	**		**
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р н	femoral		is		**	4.6	3	4.0	3.			
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miotomy			44				1	6		1	2	2
ineal Secti	on		14			٠.	6	1	1			
throtomy	(for injury)					4.4	1					
mbar Colot	omy						1	**				
tzer's oper	ation (modified) for	a large	Berota	l hernin		1					
stration							4	1				
	for injury						1					
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stic operati	ion, for vesico	ragin	al fistul	a			1		٠			
	for rupture	d pe	rineum		**		1	**				
	for extrove	rsion	of blad	der		٠.	2	1				
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puble primary Amputation. || Died from Tetanus. || Died from secondary Hæmorrhage.

ABSTRACT OF THE PROCEEDINGS OF THE LIVERPOOL MEDICAL INSTITUTION, SESSION 1869—70.

Communicated by W. MITCHELL BANKS, F.R.C.S., *Honorary Secretary*.

PAPER I.

"On the Influence of Iodide of Potassium over Salts of Mercury in presence of the various Organic Substances in the Animal Economy." By George E. Walker, F.R.C.S.

The author maintained, that when mercury is given in the ordinary fashion, with a view to "affect the system," there is no safeguard by which the accumulation of the drug to a poisonous extent can be prevented. Such a safeguard, he argued, was afforded by the combination of Iodide of Potassium with the Salts of Mercury, seeing that by this means the precipitation of the metal by albumen and other animal compounds is prevented; also, that, even if it be possible to reduce the salt from the condition of peroxidation to that of suboxidation, the Iodide of Potassium is capable of dissolving the lower Oxide of Mercury, and so preventing accumulation of that drug. He adduced cases and instances in support of the therapeutic value of the combination, where the combined drugs had been given for long periods, and with very large doses of the metal, without any of the miscalled physiological, but more truly named poisonous, effects of the drug. He also suggested that by this method mercury might be used harmlessly, at any rate in cases other than syphilic, where inflammatory deposits were present. He said, further, that the tendency of his observations went to prove that the metal was excreted by the kidneys together with the Iodide of Potassium.

PAPER II.

"On Animal Vaccination; a new source of Vaccine Lymph."
By P. M. Braidwood, M.D.

Describing a recent visit to London, Paris, Berlin, St. Petersburg, and Brussels, in search of information regarding animal vaccination, the author gave an account of the manner in which this procedure was carried on in these cities. He found Dr. Blanc most careful in the performance of the operation, and very successful. Dr. Blanc's views entirely concur with those of the Continental animal vaccinators, and the advantages possessed by heifer lymph, as they are stated in his pamphlet recently published, and entitled "Compulsory Vaccination; an Enquiry into the present unsatisfactory condition of Vaccine Lymph, and a Remedy proposed," have been also testified to by Continental writers on the subject.

Dr. Braidwood next gave a detailed account of the experiments made in Paris, during 1866, on behalf of the Academy of Sciences. and quoted from Dr. Depaul's report regarding that enquiry. lymph derived from spontaneous cowpox, and used in these experiments, was obtained by inoculating a heifer at Dr. Negri's establishment and conveying the animal to Paris; while a second supply was obtained from a case of spontaneous cowpox which occurred at Beaugency. The experiments made by this Commission, with the view of inoculating syphilis into the bovine species, proved unsuccessful. While testing the comparative merits of vaccination from the heifer, and of arm-to-arm vaccination, 38 experiments were instituted. Children to the number of 681 were vaccinated with heifer lymph, and 897 with humanised lymph. Taking into account the unfavourable conditions under which some of the experiments with cowpox were made, the Commission concluded from these observations, "that as regards the number of vesicles, if cowpox matter is used of the proper age, and under the well-known fixed conditions, we are sure not to have more failures, and to obtain vesicles equal in number to those of arm-to-arm vaccination." This being, as the author stated, the only official investigation of the subject of animal vaccination which has yet been instituted, it was very fully detailed. With the sanction of

the French Government, an institution for the prosecution of this method has now been established in Paris. Animal vaccination has not yet been sanctioned by the Prussian Government, but Dr. Pissin pursues this method in Berlin.

In the Foundling Hospital of St. Petersburg, there was instituted in 1867 the practice of vaccinating children directly from the heifer. The cowpox lymph was at first sent to St. Petersburg from Dr. Pissin's establishment in Berlin. In 1865, vaccination with retro-vaccine lymph was inaugurated in St. Petersburg, and proved successful to a certain extent, but was abandoned in favour of animal vaccination. At this Russian Institute, 100 to 200 children are vaccinated every morning through the year, directly from the heifer. Four heifers are always kept in use at the establishment, and twenty heifers are used there monthly for vaccination purposes. The lymph succeeds best when removed on the fifth day after inoculation of the heifer.

In conversing with Dr. Warlomont, of Brussels, on this subject, the author found his views to coincide entirely with those of the other authorities referred to. The testimony, then, of these witnesses, from six different nations, may be briefly stated thus:— The transmission of cowpox from heifer to heifer is accomplished without difficulty. Animals thus used receive no accident which can be legitimately referred to the operation. The successive transplantation of the same cowpox has not appeared to influence the character of the vesicles. The progress of the eruption on heifers is more rapid than that of the human vaccinal vesicle, and is affected by the health of the heifer. Vaccinating by incision has no advantage over vaccination by puncture or scratching. At a moderate expense, an establishment for animal vaccination could be organised and maintained in large towns. The number of punctures which can be made is illimitable, and the quantity of lymph which each heifer might furnish is considerable, and in each instance is more than sufficient to meet the exigencies of the most extensive practice. Heifer lymph, like ordinary lymph, often fails after being kept a certain time in tubes or on squares. In this respect, humanised lymph has a certain advantage over heifer lymph.

The advantages, then, of animal lymph are: that from this source vaccine lymph, free from all morbid and diathetic principles, is obtained; that spontaneous cowpox, by being transmitted only through the bovine race, retains all its essential qualities; and hence, that vaccination from the heifer produces the true Jennerian vesicle.

In conclusion, Dr. Braidwood expressed his strong conviction of the superiority of heifer lymph over ordinary lymph, and expressed a belief in the degenerated character of the vaccine lymph in ordinary use. The latter opinion was based on the fact that re-vaccination is, in the present day, almost always successful. Moreover, accidents, some say diseases, follow vaccination as commonly practised, whereas no accident has yet been known to occur after the employment of heifer lymph. Further, if, as is generally admitted, vaccination has been, in multitudes of instances, carelessly performed, such lymph is not subsequently purified by passing through one human constitution, but remains for ever more or less defective in its true prophylactic nature. No means have been found to restore these potent qualities to ordinary lymph, or to remove the noxious principles in it, although many attempts with this object have been made.

PAPER III.

"A Defence of Counter-irritation." By ALEXANDER DAVIDSON, M.A., M.B.

After some introductory remarks on the tendency of reformers in medicine to err by becoming extreme (this point being illustrated at some length from the history of ancient medicine, and the more recent changes in medical practice), the proper subject of the paper was taken up, viz., the attack recently made by Drs. Dickinson and Anstie on the old practice of using counter-irritants, and other external remedies, in the treatment of diseases of internal organs. This opposition has been made, not to the use of counter-irritants where applied directly to the diseased part, but only where these applications are made to parts not having any immediate connection with the seat of disease,—as, for example, a blister on the skin of the chest in pneumonia, &c. Such treatment is objected to, not only as wrong in practice, but also as

quite absurd in theory, there being no possible way of explaining how any remedy, applied to the skin, can affect the subjacent internal organs unless it be of such magnitude as to influence the whole body. This, then, being the nature of the objections made by Drs. Anstie and Dickinson, the object of the paper was explained to be, not so much a vindication of the prevalent ordinary practice of the present day in the use of counter-irritants, &c., in the cases referred to (the fact being that there is some need for reform in that practice), but rather to defend the theory, by showing the possibility of the effect of remedies applied to the skin being conveyed to contiguous internal organs. The channel by which such a therapeutic influence is conveyed, is most probably the nervous system. The old theory of counter-irritation drawing away blood from the diseased organ to the surface is indefensible, but the view that disease can be modified by influences acting through the nervous system is quite consistent with our knowledge of the dependence of the healthy processes of circulation and nutrition on the nerves. Dr. Dickinson states, that the facts of pathology show that influences conveyed by the nervous system from the skin to internal organs are only injurious; but this objection is not material to the point. It is more important to enquire whether any pathological evidence exists of disease of the skin affecting secondarily the contiguous internal organs, as this would indicate a connection between the two parts; several instances of this nature may be found, such as the fact that erysipelas of the scalp most frequently gives rise to inflammation of the arachnoid and pia mater, and that burns of the chest are so often followed by inflammation of the lungs. It is highly probable that similar evidence may also be obtained from anatomical and physiological considerations, especially from the history of development, but want of time prevented entering on this investigation. As to the therapeutical evidence on this matter, it is as strong as such evidence can be; and its apparent strength is not denied by Drs. Dickinson and Anstie. The consideration of this evidence, and the practical rules for the proper use of this kind of treatment, may well form the subject of a separate communication to the Society.

PAPER IV.

"On Thoracentesis." By JOHN WALLACE, M. D. This paper is published in extenso at p. 25 of this volume.

PAPER V.

"On Instruments: Ancient and Modern." By James Barnes, M.R.C.S.

Commencing with a brief sketch of the surgical instruments used by mankind from a savage to a civilised condition, and the progress of surgery from that of a rude art to a cultivated science, the author proceeded to trace its history from the earliest known records to the present date. Examples were given of the state of surgery as existing among the Greeks, Romans, Egyptians, Arabians, Italians, and French, and the perfection in the invention and use of surgical instruments attained by those nations; while the condition of the art in our own country was traced from the early Saxon times, when Cynifrid operated in the year 679, to the times of Harvey, Wiseman, and Young. Of the antiquity of surgical instruments evidence, irrespective of that found in the works of the ancient authors, was said to exist in the monuments of Babylon and the basso-relievos of Thebes, where were depicted the performance of various surgical operations and the form of instruments somewhat resembling many of those in use. Of the specimens of ancient instruments in actual existence, and mostly obtained from the ruins of Herculaneum and Pompeii, mention was made of the probe, speculum matricis, speculum oris, amputating knives, lancets, midwifery hooks and forceps, spatulas, taps for ascites, vulsella, trephines, elevators and others, the use of which was problematical. Passing from the general to the special consideration of the subject, the author divided instruments into two classes: instruments of Diagnosis, and instruments of Treatment. class were called on to assist the sight, the hearing, and the tactile powers of the hands. They were defined as agents by means of which the human faculties were enabled to act with intensified power, and in positions where, without their aid, they could not be brought into operation; to be, in fact, philosophically considered. extensors of the hands and senses; while with the ancients only

two of the senses were supplemented by instruments and that very imperfectly,—viz., those of sight by the speculum, and touch by the probe,—in modern times the sense of hearing has been brought into play, and through the agency of the stethoscope was developed a new world of medical enquiry. Among the more recently invented aids to sight, of which specimens were exhibited, were mentioned the microscope, the microspectroscope, ophthalmoscope, the spirometer, the sphygmograph, as invented by Marey and improved by Mayer and Metzler, the laryngoscope, the endoscope, the amoscope, the minometer, the medical thermometer, and many others. Instruments of treatment were classified according to their mechanical action, into those of puncture, division, extraction, application, compression and dilatation. knife, which was used as a surgical instrument some three thousand five hundred years ago, when Abraham used it to circumcise his son Isaac, was shown to be the basis of most of the others. From it, by simply indenting the edge of the blade, was obtained the saw, while the scissors consisted of two knives, with their blades crossed, pinned at the point of contact, and with their handles perforated for the introduction of the fingers. The principle of the scissors having been once adopted it was only necessary to blunt its edges, flatten and expand the blades to the required extent, and roughen their inner surfaces, to obtain the great instrument of extraction, the forceps; while the dilator and speculum were produced by curving the blade horizontally, and moulding them into the form of a tube. Having illustrated puncture, by reference to the needle, the trocar, and their modifications and recent improvements; division, by the knife, the scissors, and the saw, in their varied forms of guillotines, craniotomy perforators, trephines, &c.; compression, by the ligature forceps, tourniquet, clamp, écraseur and lithotrite; extraction. by the forceps, the scoop, the suction curette, and the catheter: application of irritants, by the cautery iron, the caustic holder, the spray producer, and the hypodermic syringe; and dilatation, by Thomson's, Holt's, and other forms of stricture splitters, -the writer concluded by drawing a general contrast between the instruments of our generation and those of the previous ones. attention was drawn to the greater variety of means for accomplishing known ends, and the greater number of ends arrived at in modern times and effected by instrumental assistance; to the greater perfection, lightness and elegance of modern instruments (a surgeon, a few years ago, carried about with him a small portmanteau of pocket instruments, but now a little case, capable of being stowed away in the waistcoat pocket, supplies all his ordinary wants); to the extensive introduction and varied use made of India-rubber, and to the application of the mirror and other agencies into the practise of surgery, never dreamt of in the philosophy of our forefathers.

PAPER VI.

"The Value and Safety of Arm-to-arm Vaccination as a Protection against Small-pox." By Dr. A. B. Steele.

The author pointed out that the great bulk of arm-to-arm vaccinations, since the first discovery of the process, have been performed with lymph transmitted from the early vaccinations of Jenner himself, and, therefore, whatever benefits have been derived from vaccination are due to humanised and not to the so-called "animal lymph." The value of vaccination is proved by the national statistics, which show that the death-rate from small-pox for 30 years prior to vaccination, was 3,000 per million of population per annum; the present death-rate from the same causes amounts only to 200 per million. Previous to the extension of the Vaccination Act to Scotland, the average yearly deaths from small-pox were 1,054, and in Ireland from 2,000 to 5,000. Since vaccination has been systematically carried out, the small-pox mortality, in both countries, has progressively decreased, and last year was entirely abolished, not a single death from small-pox The nurses of the Small-pox Hospital are having occurred. vaccinated with humanised lymph; and during a period of 30 years not one instance occurred of contagion from the patients in the hospital. In addition to the foregoing illustrations of the protective influence of humanised lymph, its undiminished efficacy is shown by its undiminished infective power. Blackfriars station of the National Vaccine Establishment in 1864, there was but one failure in 1,000 operations. At the Bir-

mingham station, out of considerably more than 1,000, there were but three failures; and in 1865, 1068 cases without a single failure. Mr. Shepherd, of Bristol, had 2,000 without a failure. In five stations of the National Establishment in London, Liverpool, and Birmingham, 446 punctures were made, and the result was productive of 443 typical and perfect vesicles. At the Liverpool station of the National Vaccine Establishment the lymph in use was originally obtained from Jenner, and has been carefully transmitted to the present day; an accurate and continuous record being in existence of the result of every case of vaccination performed at the station. Its effects can now be witnessed at the The foregoing proofs of the undiminished efficacy of human lymph, both as to its protective influence and its infective power, are, at the same time, demonstrative of the fallacy of the view that lymph degenerates by successive transmissions through the human subject. Jenner, while admitting the liability to degeneration from want of due care in the selection of subjects, spoke of the alleged degeneration by mere lapse of time as a "conjecture he could destroy by facts;" and this opinion was expressed by him after thirty years' careful watching of the effects of lymph which had undergone several hundred transmissions. See Barron's Life of Jenner, vol. ii., p. 398.

Jenner's views have been confirmed by numerous trustworthy observers from his own day to the present time. Marson, Ceely, Tomkins, and others give similar testimony in favour of the unimpaired efficacy of the lymph now in use. Dr. Blanc's statement, made at Leeds (see Brit. Med. Journ., Sept. 4th, 1869), that Marson and Ceely "had changed their minds" on the question, and that Marson was using his (Dr. Blanc's) lymph instead of the old Jennerian lymph, and that Mr. Ceely had pronounced heifer lymph to be superior to humanised lymph, are simply untrue, as the author had ascertained from subsequent enquiry. Equally without foundation is the argument of Dr. Blanc, that whereas one vesicle was sufficient to afford protection in Jenner's time not less than four vesicles are found necessary now. The truth is, that there is no evidence whatever, that one vesicle in Jenner's day afforded a greater degree of protection than one

vesicle does in the present day. Jenner, probably, did not limit himself to one puncture; and the early vaccinators, we know, used four or six punctures. The National Vaccine Establishment for the last fifty years have strongly insisted upon not less than four punctures. The fact that four cicatrices imply a greater degree of protection than any less number was not ascertained, and, probably, not generally suspected, until the enquiries of Marson some fourteen years ago, which will be alluded to hereafter.

Dr. Blanc's assertion, that Jenner held the opinion that original cow-pock was an absolute protection against small-pox, and his inference, viz., that as vaccination is not an absolute protection therefore its protective influence has decreased, is one other example of the want of correct information on the part of Dr. Blanc, So far from maintaining that cow-pox was an absolute protection. Jenner knew, as well as we know, that there is no such thing as absolute protection, as the existence of recurrent small-pox sufficiently shows. Jenner's opinion was thus expressed: "Duly and efficiently performed, it will protect the constitution from subsequent attacks of small-pox as much as that disease itself will. I never expected it would do more, and it will not, I believe, do less." Dr. Blanc's statement, that postvaccinal small-pox had progressively increased, until, in 1864, it reached the very high average of 84 per cent., is so patently absurd as to be unworthy of refutation.

This, and other fallacies of the same writer, have been fully exposed and answered in the *Practitioner*, October, 1869. Dr. Braidwood maintains that humanised lymph does not produce the true Jennerian vesicle, and therefore does not confer protection; and he claims for himself and Dr. Blanc the credit of introducing into this country a new mode of vaccinating, and a new source of vaccine lymph; but all who are acquainted with the history and literature of vaccination will remember that, many years ago, McPherson, Estlin, Ceely, and others had experimented largely with animal lymph. Ceely, especially, has continued his investigations, more or less continuously to the present time, and has carefully tested and recorded the results of lymph, both animal and humanised, in every different method. When Dr. Braidwood

asserts that he has observed the effects of humanised lymph at the station of the National Establishment in Scotland, and that he has seldom seen a perfect Jennerian vesicle produced by it, the only possible explanation to be given is, that his notion of what constitutes a true Jennerian vesicle differs from that of other vaccinators. The alleged indifference of the government to improvement on new discoveries in vaccination, is quite a misapprehension on the part of Dr. Braidwood. The Medical Department of the Privy Council have, for the last nine years, been progressively completing a scheme of national vaccination, which is rapidly approaching as perfect and efficient an organised system as perhaps can be obtained in this country. The question of animal lymph has not escaped them, for, from their last annual report, we learn that, about twelve months previous to the publication of the views of Drs. Blanc and Braidwood, they had already set on foot an enquiry into the system adopted on the continent; and the subject is still under their consideration. information, however, is requisite before any final opinion can be formed on the question of making more or less use of the system, for the purpose of our national establishment."

The increased frequency of post-vaccinal small-pox is no proof of the degeneration of lymph but is the natural result of the very imperfect way in which public vaccination in past years has been performed. The enquiries of Mr. Marson and of the Medical Department of the Privy Council have established, almost conclusively, that the degree of protection afforded is in direct proportion to the quality of the vaccination. Nothing less than four well-marked, typical cicatrices are sufficient to indicate a full measure of protection.

The alleged increased frequency of successful re-vaccination, is no proof of the degeneration of lymph: First, because it can be accounted for by the ascertained imperfection of the primary vaccination throughout the country; and, secondly, because the large experience which has now accumulated leads to the practical conclusion, that the local results of re-vaccination were no tests whatever of the previous constitutional condition as to liability to the small-pox. The safety of humanised lymph is proved by the

fact that, in the experience of those who on the one hand are constantly concerned in observing the diseases of children and skin diseases, and on the other those who treat syphilis as a speciality, no instance has occurred of the transmission by vaccination of other diseases than vaccinia. Secondly, numerous direct experiments have shown that, if the virus of cow-pox and syphilis were mixed syphilis alone is communicated; and, further, vaccine lymph, purposely derived from syphilitic subjects transmits to others cow-pox only. Thirdly, no well-authenticated case of the transmission of syphilis has hitherto been brought to light, at all events in this country. The alleged frequency of vaccino-syphilis on the Continent leads to the inference suggested by Mr. Ceely, "that our Continental brethren are very careless vaccinators, and that syphilis must be very much more prevalent among their infantile population than with us." The celebrated Rivalta cases. together with all the instances of supposed vaccino-syphilis, have been fully discussed by Dr. Seaton, in his Handbook of Vaccination, and his conclusion is, that "none of the alleged cases have established that syphilis has ever been imparted in the true and proper performance of vaccination." The only ground upon which the use of animal lymph can be recommended, is with the view of meeting the prejudices of that portion of the public who still believe in the possibility of vaccino-syphilis; but it must not be forgotten that, in the early days of vaccination, prejudices quite as strong were used against the inoculation of what were called the "bestial humours," and dire results were attributed to the lymph direct from the cow.

PAPER VII.

"On the Contagious Diseases Act in special reference to its Proposed Extension to the Civil Population." By REGINALD HARRISON, F.R.C.S.

The author introduced the subject in deference to a wish expressed by the Society, and he considered the present an opportune occasion, as the various aspects of the question had been so thoroughly ventilated in the columns of the newspapers. In the first place, he strongly deprecated the attempt at sensationalism,

which had been adopted by many speakers and writers, some of them medical, in discussing a subject deserving a most careful and earnest consideration, and which could only be approached by those who were fully alive to the ravages of venereal disease. It was not very pleasant to find that a certain proportion of the community was destroyed, and another permanently injured, by a disease which was unquestionably fostered by immorality; but at the same time it was hardly creditable to the much-vaunted high civilisation of the nineteenth century to do so little, and be content with a very passive interference.

The origin and progress of the Act, and its application to the naval and military populations, were then reviewed, and some of the objections to the extension of the Act to the civil population were then criticised. The most prominent of these was, that venereal disease had not assumed such proportions in extent and severity among the civil population as to require legislative interference. In opposition to this, the opinions of Sir William Jenner, and of Mr. Paget, were adduced from among many others, clearly showing how large a number of lives are annually sacrificed by the hereditary transmission of these diseases. The condition of Liverpool was then alluded to, and evidence was brought forward showing venereal disease to be very rife in this town. From information acquired, the author was of opinion that there was an increasing number in this town of very young prostitutes,-mere children, that is to say, between the ages of fifteen and seventeen These latter, it was admitted, were cases where the legislature should interfere, not only by removing the individual for the time required for the cure of the disease, but until she should have reached a period of life when she would be better able to appreciate the consequences of so vicious a life. In regard to the liberty of the subject, interference on sanitary grounds was absolutely required. It was a well-known fact that the hospital wards in Liverpool, occupied by female venereal patients, were, at certain portions of the year, for - instance, at Tranmere wakes, Chester races, &c.,—suddenly emptied, the patients returning when their profits were at an end, or their disease so aggravated as to prevent further intercourse. It was asked, whether detaining these

people could be regarded as an improper interference with the liberty of the subject.

The author thought that the act should not be directed solely against the female sex, but should include others, who, from their habits, are considered fruitful in spreading disease,—such as the militia (before disbanding), merchant seamen, prisoners and vagrants,-rendering the wilful communication of the disease a punishable offence. Evidence was next adduced to show that the tendency of the act had been, not only to improve the moral condition of the women who had been brought under its operation, but had been the means of restoring again to society a large proportion of them. The horrible condition of the women known as the "wrens of the Curragh" was then referred to, showing the necessity for some legislative interference to deal with a class of women who had persistently resisted all other means. The present system of driving prostitutes into the public streets and thoroughfares was then commented on, as needlessly throwing temptation in the way of many who would never go out of the way to seek for Sir William Jenner's evidence in the House of Lords was adduced in support of this view (Answer 1,096): "I have a strong opinion that great evil results from allowing the prostitutes to ply their trade in the streets. I think that that is a thing which tends largely in this country to spread the disease. I have known a great many cases of young men, who would never have yielded but for the facility with which they are assailed in the streets."

In conclusion, it was argued that advantage should be taken of the present occasion to do something towards abating the spread of a disease which involved in its meshes far more innocent sufferers than at first sight appeared. But little good would be likely to accrue from anything short of legislative interference.

PAPER VIII.

"On the Early Stages of Syphilis as affecting the Skin." By EDGAR A. BROWNE, M.R.C.S.

The existing confusion in the description of syphilides is caused by no untrustworthiness or lack of ability on the part of the observers, but by want of agreement in method. If there is one method with any pretence to a wide acceptance, it is the faulty method of Willan, which, however useful in its way, is totally inadequate to effect the distinction between what is essential and what accidental in the syphilitic diseases of the skin; and, unless this distinction is very rigidly kept in view, any real simplicity is impossible. That an essential simplicity does exist may be assumed, for the more we study disease the stronger is our conviction that it is, like all physical phenomena, under the dominion of law, from which deviation may be apparent, but is certainly Syphilis has been called a Proteus, but is really in impossible. its evolution as orderly as other diseases. By reason of its exceptionally chronic course, its typical development is liable to be modified and obscured by accidental circumstances; but, when we consider that it is found in all climates, attacks persons of all ages, and apparently without excepting any temperament or diathesis; it becomes almost a matter of wonder, not that it changes its appearance so much, but that it changes so little. The evolution of syphilis is accompanied by a series of actions, which do not altogether correspond with the useful and practical division of primary, secondary, and tertiary periods, but are nevertheless equally plainly marked. 1. Stage of inoculation and incubation, in which the symptoms are nil. 2. Stage of progressive activity, characterised by pyrexia, an exanthem, and special local lesions. 8. Stage of relapses or latency. 4. Stage of destructive sequelæ. 5. Stage of perverted or anomalous nutritive activity.

Syphilis, like other zymotic poisons, when introduced into the body, gives rise to a systemic disturbance, which has been accurately described as syphilitic fever. It is sometimes so slight as to escape observation, especially in men. Besides the symptoms of pyrexia, it is usually accompanied by an eruption. This, the macular, erythematous, or roseolar syphilide, is sometimes so faint as easily to escape detection. In private practice, where the patients keep themselves closely under medical surveillance, it is almost always seen. In a number of cases, sufficiently well recorded to seem accurate, it appears as the earliest symptom in 57 per cent. It may be said to follow, as a rule, the inoculation of the syphilitic poison; the instances in which it is not developed

are very rare, and correspond with cases of scarlatina without rash. Two varieties are described, but they are pathologically identical in their nature. In its mechanism, it resembles the rashes of typhus, measles, &c., and is essentially a hyperæmia of the skin, presumably dependent upon inhibitory paralysis of the vaso-motor nerves. It is in nowise inflammatory, and passes away in due course without treatment. It sometimes appears, and is recorded as papular. The papules are formed by the papillæ of the skin, simply as a result of the excessive blood supply, appear and disappear with great rapidity, and differ in their constitution from the other papules.

This, the first series of rashes in syphilis, whether the actual mischief be a large or small inoculation or slightly raised sore, and resembling roseola vulgaris or papula, with a feeble form of desquamation, are formed by one, and only one, pathological process, identical in its intimate nature with that of other exanthems.

The next series may coincide or follow, but never precedes, the Their existence depends upon the special local lesion of syphilis, a circumscribed, adhesive inflammation. The portion of tissue attacked is limited in its extent, the action indolent, with little tendency to resolution and none to suppuration, the lymph effused considerable in quantity,—the first manifestation at the site of inoculation, -where it constitutes the papule or hard chancre; it afterwards attacks the skin, mucous membranes, iris, &c. In the skin, this localised inflammation, beginning in a hair follicle, a sebaceous gland, or a papilla, forms small papules, and constitutes a lichen. As the papules enlarge, they become confluent, and form little tubercles (this is a common variety); or the breadth of the area of inflammation is altogether out of proportion to its depth, beginning as a bright, red spot, extending laterally, sometimes attaining considerable size, after a time fading, when the well-known coppery colour is developed, and the epidermis round the edge of the disc is thrown off as fine white scales. distribution of this series assumes an infinity of forms by combination, &c., and is described as the lenticular syphilide. same action takes place on a larger scale, and the epidermis is thrown off the whole surface as a flake, or in scales. This is called syphilitic lepra,—a bad name, for if lepra is ever directly caused by syphilis, which is scarcely proved, it is not at this stage. eruption is not really squamous, but essentially papular; and the desquamation is an exaggeration of the natural process by which the cuticle is thrown off and renewed, caused by the long continuance of the inflammation without any tendency to suppuration or ulceration. If any of these forms occur on mucous membranes, or where the skin is constantly moist from perspiration, a "mucous tubercle" is the result; it differs from the other papules only in the accident of its situation. The pustular syphilides are a variety of the preceding group, complicated by the accident of suppuration, which is dependent, not upon the syphilis, but upon the inability of the recipient tissues to withstand the stress laid upon them, and to inflame without passing into a distinctive stage, and Syphilis causes lymph to be thrown out, but it does forming pus. not form lymph, nor does it confer upon a system which is deficient in this respect power to do so for itself; and when this is the case, the usual destructive results of inflammation, even to sloughing, may be expected. The vesicular syphilide is very rare, and it is doubtful whether it ever depends upon syphilis. Vesicles can be produced by outward agencies in the skin of syphilitic subjects, but such eruptions must be carefully discriminated from those actually caused by the poison. The pigmentary syphilide is not an elementary form at all, but the result of a previous state of The paper concluded with some remarks upon hyperæmia. treatment, in which it was maintained that in those cases where any medicine at all was needed, mercury was the only drug with any pretence to being a specific.

PAPER IX.

"On Hydrate of Chloral." By Dr. MARTIN OXLEY.

After curtly describing the chemical nature and physical properties of Hydrate of Chloral, the author proceeded to discuss its physiological action of chloral. According to Liebreich, Richardson, and others, chloral is decomposed by the alkali of the blood, so that chloroform is gradually liberated. The action of this substance on the nervous system is primarily on the sympathetic

ganglia, afterwards on the cerebrum. In the case of an over-dose, the functions are destroyed in the following order: a, cerebral; b, the voluntary muscular; c, the respiratory; d, the heart. Chloral produces muscular relaxation, which relaxation extends to the muscles of volition, and also to the iris. Deep and prolonged narcotism may be produced by the drug, and during a portion of the time there may be complete anæsthesia, with entire absence of reflex action. Dr. Noir reports a case in which he administered 75 grains, and amputated a leg, without the patient moving or uttering a sound. The coma for an hour afterwards, and violent delirium on waking, would prevent Dr. Noir recommending its use under similar circumstances.

With regard to the mode of administration, chloral may be given by the mouth, by the rectum, and by hypodermic injection. Of these methods, the one to be preferred is by the mouth. Its acrid taste requires it to be largely diluted, and mixed with some aromatic, or with plain syrup.

The dose, as an hypnotic, is ten grains to begin with, increasing it to thirty, or even to sixty grains. The greater the necessity, as in the case of severe pain, the larger is the dose required. When given as a sedative, it is well to administer it in divided doses of from five to ten grains, repeated every three or four hours.

The author had found the following to be its principal applications:—For the relief of pain, as after operations, neuralgia and angina pectoris, and in cases of painful joint-disease. In cases where patients suffering from bronchitis or Bright's disease are prevented from sleeping, and where it is impossible to give opium with safety, the drug is most valuable. In insomnia of a nervous character, it will also be found most useful, very small doses generally having the desired effect. In cases of nervous irritability, a dose of five grains, repeated two or three times daily, will, in almost every instance, produce a sense of ease and comfort.

In insanity, Dr. Tuke states that he considers this medicine to be the most valuable means of procuring sleep which has yet been introduced into the Pharmacopæia of the Asylum Physician.

As an hypnotic in the delirium of typhus, Dr. Russell, of Glasgow, has used it largely, and reports a number of cases in

which it produced sleep, and subdued the most violent delirium. In chorea, the author had found it only useful as an hypnotic, in cases where the violence of the movements prevented sleep, and rendered the case hopeless; but as a cure of the disease per se, this drug is quite useless. In puerperal convulsions, hydrate of chloral has been administered with the best results. As a sedative in hooping cough, two or three grains, repeated frequently, relieve the patiently rapidly.

Again, in teething, this drug is most useful, and removes at once all irritation.

In the author's experience (which, since the reading of this paper in the early part of the year, has been amply confirmed), this medicine in many cases produces effects, which, if not explained, may tend to prevent the employment of this very useful drug. The most constant of these is vomiting almost immediately after it is swallowed; but this may be avoided by giving it largely diluted. At other times it produces troublesome dreams, strange tingling feelings in the tips of the fingers, in the palms of the hand and soles of the feet; at other times a feeling as if the patient were overcome by drink is experienced. These symptoms, it should be noted, are generally owing to the dose being too small, and it ought to be cautiously increased. Finally, if given in a larger dose than is required to produce sleep, poisonous effects may ensue, as in the case reported by Dr. Reynolds.

COMMUNICATION.

"On Bromidrosis." By Edgar A. Browne, M.R.C.S.

The author began by observing that very few dermatologists noticed the complaint at all in their writings, with the exception of Wilson and Hebra, the latter of whom goes fully into the subject. He believed that the offensive character of the perspiration was, to a great extent, accidental, and not essential to the disease, and that it was really due to decomposition or putrefaction of the sweat after it had passed from the body. The patients are usually of the lymphatic type,—the nervous system poorly toned and apt to break down under stress, skin pale, sallow or muddy, generally thick, loose, tender to external impressions, and liable to acne,

eczema, and other diseases of a low type. Sex does not seem to The offensive smell varies much in degree, have any influence. being in some instances so slight as only to be noticeable upon extraordinary occasions, and in others rendering the room in which the person is quite unbearable. When cases are investigated, it is found that the feet (taking the commonest and most typical seat of the disease) perspire very copiously; that there is very little more odour in the freshly secreted sweat than is natural, but that when the socks or shoes are saturated with it, in course of a little time If these dirty socks are kept for a day or the odour is developed. two, and then warmed before a fire, or by the heat of the feet, the odour is intensified. The same amount of sweat in the hands, whence it is constantly removed by evaporation and washing, does not in these cases present any peculiarity except as to quantity. This is an important clinical fact, indicating that the fault resides mainly in a weakness of the skin or of its capillary nerves, and is not dependent upon a natural effort to excrete any materies morbi. Two points may then be noted:—(1.) That whatever is done, generally the part of skin affected must be brought into good condition by topical applications, and the amount of perspiration excreted reduced to a minimum. (2.) There is no danger, as might be expected if the theory of elimination were true, of doing harm by stopping the perspiration. For the milder cases, the feet should be washed in cold water (hot does harm), with juniper tar soap, and then powdered with a mixture of oxide of zinc, tannin, and violet powder. The socks and boots to be changed frequently, especially after any exertion. For the more severe cases, the author has tried curbolic acid - one ounce of the acid with three of water — and of this two teapoonfuls are to be put in half a pint of water, and the feet are to be mopped with it after thorough washing; the strength to be increased every night till it causes pretty severe smarting. Hebra's method, however, is incomparably the best, though attended with a good deal of inconvenience in the application. An ointment of equal parts of linseed oil and the ordinary diachylon plaster, scented with a little oil of lavender, is to be applied as follows: - the feet are to be washed in cold water and dried thoroughly; the cintment is then to be rubbed thinly

over the affected skin, folds of lint spread on each side with the cintment are to be placed between the toes, and a bandage prepared in like manner to be equally adjusted over the whole foot; or, it is a convenient plan, to cut open a well-fitting sock and spread its interior with cintment, and put it on the foot, drawing on a cotton or thread sock over it to maintain it in position. This is to be renewed every twenty-four hours for eight days, during which time the patient must not on any account wash the portions of skin under treatment. The old porous and sodden epidermis is thrown off, and replaced by a new scarf skin of finer texture. With a little care, and the occasional use of an absorbent powder, the patient may often consider himself permanently cured; but more frequently the good effects of the application wear off, and the treatment has to be repeated.

COMMUNICATION.

"On the methods of treatment to be adopted in the various Lesions of the Lachrymal Apparatus." By Thomas Bickerton, F. R. C. S. Ed.

The author exhibited a great variety of instruments, illustrating the history of the different modes of treatment in use at various times. He dwelt upon the old plan of attempting to dilate the duct from the nose, and showed its inefficiency; then upon the plan of simply putting styles into the nasal duct; and then showed how great an improvement Bowman had effected by his operation of slitting up the punctum and canaliculus. Finally, he described the modern operation of slitting; and Weber's, consisting in the introduction of a powerful, graduated probe into the sac, after a peculiarly shaped knife had been passed down, and the stricture thoroughly divided. He showed an improved form of probe, of his own invention, in which there was a small groove at the side, along which the knife could be slipped down into the sac with perfect safety. He also showed an improvement in the shape of the knife.

COMMUNICATION.

- "A case of removal of a penny which had been impacted for six years in the larynx." By John Cameron, M. D.
 - G. M., when ten years of age, was playing with a penny which

accidentally slipped into his throat. A probang was passed very shortly afterwards, but without effect. After about six months he came under Dr. Petrie's care, and at that time there was considerable tenderness around the larynx, and some swelling, but little or no difficulty in swallowing, and there was no abnormal appearance visible internally. The voice was weak and shrill, there was loud stertor and snoring at night, much cough, and free expectoration.

Under treatment these symptoms considerably abated, and for the next two years the laryngeal affection was nearly stationary, but the patient was evidently losing strength and flesh. In about another year it became evident that his lungs were becoming affected, and that he was suffering from incipient phthisis. Dr. Cameron saw him in consultation about six months afterwards, but attention was almost entirely directed to the chest, little notice being taken of the laryngeal affection, or the now almost forgotten accident with which its origin was associated. Under treatment he improved greatly, so much so that he took two voyages to the Mediterranean, and afterwards went to Brazil, whence he returned, two months before the paper was read, in very good general health.

In January of the present year, Dr. Cameron saw the patient, who was now suffering only from symptoms referrible to the larynx, viz., occasional cough, with a peculiar, harsh, ringing sound, stridulous breathing, feeble hoarse voice, and scanty expectoration. occasionally tinged with blood. On each side of the larynx there was some swelling, and forcible compression caused slight pain. The patient swallowed without difficulty or pain. The peculiar cough and stridulous breathing induced Dr. Cameron to examine the larynx with the laryngoscope. A good view of the vocal chords and other parts was obtained, and in addition there was seen a bright metallic-looking line at the lower part of the image, losing itself on each side and below in the surrounding parts. This was evidently the edge of the penny imbedded in the posterior wall of the upper cavity of the larynx. It was determined to remove it, and, a proper pair of forceps having been constructed, Mr. Minshull, in the presence of Drs. Petric, Cameron, and Little, removed it with some difficulty, and with the use of considerable force. This has been followed by gradual decrease of the swelling round

the larynx, improvement of the voice, and relief to the breathing and cough. The penny was thinner, and of a dark greenish-black colour; its surface was eroded, having, when examined with a lens, a honey-combed appearance, and it must have lost about 18 grains in weight.

Report of a Committee (Dr. Caton and Messrs. Hamilton and Banks), appointed to examine into the nature of certain Tumours removed from patients in the Royal Infirmary, ly Messrs. Bickersteth and Harrison.

Before proceeding to the consideration of the structure of the tumours which we have submitted to examination, it may be as well very briefly to recall to the notice of the members a few points in connection with their history. The first tumour was removed by Mr. Harrison from the upper femoral region of a middle aged man. It had existed about seven months, and had been growing with tolerable rapidity during the last three or four. It seemed to have taken origin from the capsule of the hip-joint (to which indeed it was so intimately connected that it had to be removed with the ecraseur), and to have grown towards the surface outwards among the muscles in Scarpa's triangle. Many large vessels were connected with it. It had a well defined capsule.

The second tumour had been removed from beneath the left deltoid muscle of a young and healthy man, about twenty-three years of age. It had been growing for about eighteen months, without causing much, if any pain, or weakness of the arm. It too had an audible bruit. Considerable hæmorrhage was expected during the operation, but it was dissected out with more ease than was anticipated. It was enclosed in a tolerably well marked capsule.

From the history of these tumours, and from the naked eye inspection of recent sections, it was sufficiently obvious that they were neither fibrous in their nature, nor scirrhous (hard cancer), nor medullary (soft cancer). These being excluded, there remain the fibro-cellular, the fibro-plastic, and the myeloid varieties; and as it is only comparatively recently that distinctions have been made between these tumours, the Committee think it right to state what is the opinion of modern authorities concerning them.

M. Lebert, many years ago, drew attention to the existence of a class of tumours which he named fibro-plastic, and which had previously been included under the highly indefinite name of "sarcoma." The characteristic microscopical feature consisted in the presence of elongated, single, nucleated, fibre-cells. Mr. Paget, however, in the last edition of his work on Surgical Pathology, states that these so-called fibro-plastic cells are by no means absolutely characteristic of this set of tumours, for they are extremely common in the rudimentary fibrous and fibro-cellular tumours, and even in developing lymph and granulations. Indeed, he does not make any distinct group of fibro-plastic tumours, but states that he would consider any tumour consisting alone of elongated fibre-cells as a rudimental fibrous, fibro-cellular, or recurrent fibroid growth. In fact he believes that Lebert included in his fibro-plastic group many of the last-named series. Next, there was discovered a new microscopic element in some tumours, namely, large, manynucleated, slightly branching cells, bearing an exact resemblance to those which are discovered in the marrow and diploe of young The tumours which contain such cells have growing bones. since been named myeloid, or marrow-like. The presence of the myeloid and of the fibro-plastic cell in the same tumour has, however, been found to be extremely common, and hence cases are constantly described in the Journals as cases of fibro-plastic tumour, or of myeloid tumour, depending upon the preponderance of the fibro-plastic, or of the myeloid element. Mr. Paget, however, insists that if any marrow-like cells at all are found in a tumour, it should be called a myeloid tumour. Out of twentyeight cases which the Committee have collected from English Journals, in twenty-four the tumour was directly connected with bone, and only in four with other parts. Seven existed in the condyles of the femur, six in the head of the tibia, four in the head of the humerus, two in the head and in the lower end of the fibula, one in the elbow-joint, one in the frontal bone, and one in the lower jaw. Of the others, two were in the lung, one in the right hemisphere of the brain, and one in the muscles of the thigh; and of these four, one in the lung and one in the muscles of the thigh were secondary. In the greater majority of these

tumours, where a careful microscopical examination was made, both the fibro-plastic and the true myeloid elements were combined. With regard to the innocency or malignancy of these tumours, they appear to be still in the debatable territory; but there can be no doubt that, though correctly classified with the innocent group, they yet verge closely upon the malignant; and several of the tumours described as presenting undoubted myeloid characters recurred in the glands and other organs.

With regard to the tumours submitted to examination. Thev both had a tolerably defined capsule. They were liberally supplied with blood-vessels, so much so that in Mr. Bickersteth's case a distinct bruit was audible. They had a firm, semi-elastic feeling. On section they presented a yellowish colour, varied with reddish streaks and blotches. In Mr. Bickersteth's case a few small cysts were present in the interior, and one portion of Mr. Harrison's tumour, in the centre, was very soft, and almost breaking down. No juice could be scraped from the surface, such as can be obtained from a true cancerous tumour. Mr. Bickersteth's tumour alone was submitted to microscopical examination, as the other had been too long kept in spirit. The bulk of the tumour consisted of very large many-nucleated cells, presenting the closest resemblance to those previously described as characteristic of the myeloid growth. Some were round, and others oval, or polygonal. Masses of these cells were bound together by a fine fibrous connecting stroma, and many blood-vessels were visible in each section. Some striped muscular fibres were found near the circumference of the tumour, doubtless incorporated by the growing tumour.

The Committee admit that the position of these tumours (intermuscular spaces) is much more suggestive of the fibro-cellular than of the myeloid growth, but there is extremely little fibrous matter in the tumour which was examined, while the cells exactly resemble the marrow cells figured by Mr. Paget. They, therefore, have come to the conclusion that the tumour examined is a true specimen of myeloid growth.

ABSTRACT OF THE PROCEEDINGS OF THE MICRO-SCOPICAL SECTION OF THE LIVERPOOL MEDICAL INSTITUTION.

SESSION 1869-70.

Communicated by Isaiah de Zouche, M.D., Honorary Secretary.

The arrangements for the meetings were conducted by a committee, consisting of Mr. Hamilton, Chairman, Dr. Waters, Mr. Harrison, Dr. Braidwood, and Dr. de Zouche, Hon. Secretary.

First Meeting, Oct. 15th, 1869.

Dr. McNaught, President, in the Chair.

Dr. Waters delivered an introductory address, in which he pointed out the importance of microscopical observation in reference to practical medicine. He passed in review the recent advances in pathology due to microscopical research, and the improved methods of treatment consequent thereon; and, in conclusion, dwelt on the value of the microscope in ordinary practice, as an accurate and ready means of diagnosis in many diseases, which would without its aid remain obscure.

Dr. Davidson showed Nachet's new microscope-stage, of plateglass.

A number of preparations, illustrative of the healthy tissues, contributed by various members, were then exhibited.

Second Meeting, Nov. 8th, 1869.

Dr. Vose in the Chair.

Dr. Braidwood read a paper, "On the Microscopical Examination of some of the Farinas," and illustrated it by specimens of starches derived from the Gramineæ, namely, from wheat, pollard, barley, oat, maize, and rice. He showed the structural characteristics of these various starches, and how some of the adulterations of food may be detected by means of the microscope.

Mr. Harrison exhibited several preparations of urinary deposits,

namely, uric acid, oxalates, phosphates, hippuric acid, spermatozoa, &c.

Dr. Waters showed specimens of renal casts, from cases of Bright's disease.

Third Meeting, Dec. 10th, 1869.

Dr. McNaught, President, in the Chair.

Dr. Caton read the following paper: "A Review of Recent Investigations in the Physiology of the White Blood-Corpuscles."

The paper described—Firstly. The amœboïd movements of the corpuscles; changes in form and outline, accompanied occasionally by change of position.

Secondly. The power of the white cell to draw into itself bacteria and small solid bodies of all kinds floating in the liquor sanguinis. These two properties being common to pus-, and salivary-corpuscles.

Thirdly. The migration of the white corpuscles out of the capillaries in inflammation, as described by Professor Cohnheim, of Berlin.

Lastly, the paper gave an account of the theory founded on these facts, namely, that pus consists of white blood-cells which have escaped from the circulation.

Dr. Caton exhibited the white blood-corpuscles of various animals, under the conditions in which the amœboïd movements are to be seen. He also performed Professor Cohnheim's experiment on the inflamed mesentery of the frog, to show the passage of the white corpuscles out of the capillaries. The circulation of the blood in the frog, fish, mouse, and water-newt were also shown by him.

Fourth Meeting, Feb. 21, 1870.

Mr. BICKERSTETH, President, in the Chair.

Mr. Hamilton read a paper, "On the Microscopical Appearances of Cancer." He alluded to the difficulty of ascertaining the causes of cancer, and proceeded to describe the various forms of the disease, giving the views of Arnott, Beale, and other pathologists.

He maintained that there were no typical cancer cells, the discovery of which would at once enable the observer to assert that

the mass from which they were removed was malignant; but that there was a certain combination of appearances to be found, in sections taken from hard, solid, malignant growths, which were peculiar to them, and to malignant growths only; these were, a fibrous stroma with interspaces, of an ovoid shape, in which were a number of cells of large size, filled with granules; whilst in the soft ulcerative forms of cancer, such as cancer of the uterus or of the pharynx, there were no distinguishing characters to enable one at once to pronounce upon the nature of the disease. The peculiar appearances presented by hard cancerous growths would, he believed, be more generally recognised, if the section of the cancerous mass were obtained from the living subject, and examined immediately after removal. If it is not possible to examine the specimen at once, it should, without delay, be immersed in some preservative fluid. The best is glycerine diluted with water.

The specimens illustrating the paper were, cancer of the tongue, larynx, œsophagus, liver, peritonæum, mamma, uterus, testicle, &c.

Fifth Meeting, Feb. 18th, 1870. Dr. Vose in the Chair.

Mr. Newton read a paper, "On the Correlation of the Organs of Sense."

He included under the term senses, all those parts or organs by which we receive our impressions of the outer or material world. And, just as in primitive states of society each individual has to perform many functions, which in our complex civilisation are transferred to many separate persons, so in the lowest types of animal life all parts appear to perform all functions, and complex organs of special sense are only to be found in their fullest development in the highest. The sense of touch was shown to be the starting point for all the rest, and that from which all the others are differentiated, being the most generally diffused, the simplest in its apparatus, and the only sense distinctly traceable through every form of animal life. Nay, it is even possessed by some vegetables, as the sensitive plant; so that at this, the lowest extremity of the scale, we start from the debatable ground between the two great kingdoms of the animated world. The numerous points of analogy between the various senses was dwelt on, and it was shown that they were all resolvable into contact-senses, modifications of the sense of touch, the apparatus for concentrating the sensory impression becoming more complex as the stimulus that excited it was more subtle. This was particularly illustrated by reference to the structure of the eye in man, as compared with the multiple eye in insects. In the former, there is little analogy between the retina and the sensory papillæ of the skin; but in the latter, the filaments of the optic nerve are entirely separated and spread out, each receiving upon its sensory tip a separate image. The paper concluded with a critique on Professor Marshall's classification of the senses, and with an attempt to group them according to the great law of development, as established by Von Baër and Darwin, that the tendency of organisation, as we ascend the scale, is from the homogeneous to the heterogeneous from the more general to the more special.

The paper was illustrated by sections of the eyes of insects, sections of the skin and ear, &c., of various animals.

Mr. Hamilton exhibited and described the following microscopical specimens:—

Section of Scirrhus of Mamma, from a case of Dr. Graham.

- , Cancer of Kidney, from a case of Mr. Bickersteth.
- .. Encephaloid Cancer of Ccrebellum, from a case of Dr. Cameron.

Sixth Meeting, March 18th, 1870.

Mr. BICKERSTETH, President, in the Chair.

Dr. Davidson read a paper on "The Vegetable Parasites of the Skin."

The paper contained a description of the common forms of skindisease which are associated with a vegetable parasite:

- 1. Favus, or Tinea favosa, and its fungus Achorion Schoenleinii.
- 2. Ringworm, or Tinea tonsurans, and its fungus Tricophyton.

Ringworm of the Body and Ringworm of the Beard were shown to be due to the same fungus as Ringworm of the Head, the differences in appearances being merely due to the different localities.

The question of the parasitic nature of Sycosis was discussed at some length, and the proofs adduced by Dr. McCall Anderson, of the existence of the parasite in this disease, were accepted as sufficient.

- 3. Tinea versicolor, and its fungus Microsporon furfur.
- 4. Tinca decalvans (Alopecia areata) was passed by, as its parasitic nature is still a matter of doubt.

The theories that were held as to the relation of the fungus to the skin disease were then discussed; these are four:

- 1. That the appearances described are not vegetable at all, but merely degenerations of the natural structure of the skin.
- 2. That the fungi are not the cause of the skin disease, but merely secondary to disease already existing.
- 3. That there is only one fungus; the same in all forms of skin disease.
- 4. That there are several kinds of fungus, each giving rise to its own disease.

The first and second theories were shown to be disproved by the mode of origin and spread of the diseases, and by the appearances shown under the microscope, as well as by many other considerations.

The arguments for the third and fourth theories were fully examined, and the balance was shown to be in favour of the last, namely, that each of these forms of parasitic skin disease is due to a distinct fungus. Still the question of the unity or multiplicity of the parasite was acknowledged to be not certainly determined.

The paper was illustrated by drawings, and by a large number of microscopic preparations.

Mr. Hamilton exhibited a section of a Non-malignant Tumour.

Dr. de Zouche showed a specimen of Hippuric Acid, which occurred in the urine of a young man suffering from spermatorrhæa, the result of debility from rheumatic fever. Also Muscular Fibres showing Fatty Degeneration, from the heart of a man who died of Apoplexy.

Seventh Meeting, April 29th, 1870.

MR. BICKERSTETH, President, in the Chair.

This meeting partook of the character of a Conversazione. Forty-five members were present, and fifteen visitors.

The Secretary read the Report of the Meetings of the Microscopical Section for the Session. The following extract from the report will show the object contemplated in the establishment of this section. "The Microscopical Section was called into existence only last year, to supply a want which it was felt the Ordinary Meetings did not provide for, namely, the furtherance of microscopical research in its relation to pathology, and the utilisation of the microscope in every-day practice. It was also desired to bring under the notice of members recent improvements in microscopical apparatus, and methods of investigation.

"It has been the design of the Committee to render the meetings of as practical a character as possible; and it will be seen, by referring to the list of papers read and specimens shown, that this object has been steadily kept in view. In a few instances, preparations mounted by skilled manipulators have been shown as test objects, but the great bulk of the specimens illustrating the papers were prepared by the contributors of the papers. Besides these, other specimens were shown, illustrating certain pathological conditions, from cases occurring in the ordinary routine of practice. This is a feature of the meetings to which the Committee attach much importance; thus, sections of tumours, renal tube casts, and such specimens, while they are easily obtainable, give a great interest to the meetings, placing as they do before the observer a ready and unmistakable diagnosis of diseases, which without microscopical aid could only be surmised."

Fifty-seven microscopes were arranged, in the small theatre and the museums.

Messrs. Chadburn and Son exhibited a series of enlarged photographs of Diatoms, &c., seen by the Lime light. They also showed the Zirconia light.

Dr. Waters showed a series of preparations illustrating the Anatomy and morbid Anatomy of the Human lung.

Mr. John Abraham demonstrated the Circulation in the Lungs of the Frog, and exhibited some injected preparations of the Intestines, &c.

Dr. Caton showed the Circulation in the Fish, and an ingenious apparatus for keeping a continuous stream of water on the fish while under the microscope. He also showed some parasites of the fish, &c.

Messrs. A. Abraham and Co. contributed a Tank Microscope; a Heliostat for Microphotography; a series of Tar products, for the Polariscope; Blood Discs of Mammals, Birds, Reptiles, Batrachians, and Fishes, &c.

Dr. Sommers showed some Infusoria.

Mr. Harrison exhibited Injected preparations of the Viscera.

Dr. Braidwood showed Sections of the Organs of Special Sense.

ABSTRACT OF THE PROCEEDINGS OF THE LIVER-POOL NORTHERN MEDICAL SOCIETY FOR 1869.

I. PATHOLOGICAL SPECIMENS EXHIBITED.

By Dr. Nottingham.

Fungoid Disease of the Femur.—The bone was completely eaten through, and detached about an inch above the condyles. The limb was amputated.

2. Ovarian Tumours.—Two vascular, cauliflower tumours, removed from the ovarian regions. The patient died on the following day from internal hæmorrhage. Also, a simple unilocular cyst, removed from another case which recovered.

By Mr. HARRIS.

- 1. A Calculus, measuring 21 inches by 1 inches, removed from a man aged 30 years, who had suffered for twenty-five years from the symptoms of stone in the bladder. The operation performed was a modification of the median method, with external semilunar incision of Celsus and the perpendicular of Civiale meeting its convexity at its centre; a rectangular grooved staff was used, and the double lithotome of Dupuytren. Repeated hæmorrhages followed the operation, which were arrested at first by the employment of cold, and ultimately by the application of the actual cautery. After the bleeding on the ninth day the female urethral dilator was introduced into the wound, and retained for twelve hours, when it was replaced by a zinc tube filled with ice, which was continued for five days longer. The patient made a good recovery.
- 2. Small fibroid uterine Tumour, removed from a patient, aged 44 years. It was extracted from the uterine cavity by means of Dr. Braxton Hicks' wire ecraseur. This relieved the menorrhagia and other symptoms.

By Dr. Colles Anderson.

Malignant Tumour removed from a man, 67 years old, whose body was covered with fifty or sixty more growths of a similar nature, varying in size and position. The tumour exhibited had been removed from below the skin of the back because of its interfering with the patient's decubitus, and was as large as an orange. On microscopical examination, this and the other tumours on this patient were discovered to present the characters of melanotic cancer.

By Mr. Blygh.

Encephaloid disease of the Eyeball.—The whole of the eyeball was removed from a child, fourteen months old; because it was the seat of this disease. The affection had been of three months' duration. Patient recovered well.

By Mr. Wigglesworth.

Cartilaginous tumour, partly ossified, of the size of a small kidney-bean, removed from the hard palate.

By Dr. J. W. IRVINE.

- 1. Diseased bone removed in excision of the Knee.—Two sets of specimens were exhibited. Both cases did well. Ivory pegs were employed to hold the bones in apposition, and were strongly recommended—as aiding in the treatment.
- 2. Foreign body from the Vagina.—A round brass tobacco box, $3\frac{1}{2}$ inches in diameter, had been introduced by the patient's husband, and allowed to remain in the vagina for a fortnight. When removed, the box was found to be considerably corroded, but owing to its lid being closed, the tobacco had not been affected.

By Mr. Lowndes.

- 1. Spina Bifida.—The spine and pelvis of a child who died from Spina Bifida, occupying the lower lumbar and upper sacral regions, was exhibited. The midwife in attendance punctured the tumour. The child lived ten days.
 - 2. Imperforate rectum.—The child was two days old. An

unsuccessful attempt was made to reach the bowel; and on post mortem examination the rectum was seen descending on the right side of the pelvis, and terminating about an inch from the anus, to the right of the mesial line. The coccum was found lying on the spinal column and beneath the small intestines.

By Mr. Bradley.

Fracture of Femur into the Knee-joint.—The femur showed an oblique simple fracture, with a considerable amount of union (the provisional callus being beautifully seen), and a longitudinal fracture passing between the condyles into the knee-joint. The knee-joint inflamed, giving rise to hectic fever, which necessitated amputation.

Malignant disease of the Larynx.—The patient was 41 years old. Eighteen months ago a malignant ulcer appeared on the right side of the tongue. Portions of this organ had been removed on three separate occasions. The right parotid, submaxillary, and sublingual glands became enormously distended with cancerous deposit, and death resulted from apnœa. After death, the epiglottis was found to be very much thickened, and the glottis was studded with malignant deposit.

By Dr. A. SAMUELS.

Imperforate Rectum.—The child, four days old, showed the anus to be perfect, but the rectum was imperforate and 1½ inches distant from the anal aperture. The gut was punctured, and a copious discharge of meconium and flatus followed, with great relief to the patient. Death, however, ensued in ten hours; and the autopsy showed that hæmorrhage had taken place between the coats of the bowel—dissecting its mucous from its muscular layer.

II. CASES RELATED OR EXHIBITED.

By Dr. WHITTLE.

Cases of Renal disease.—The first case was that of a man aged 40 years, who had during fifteen years drunk 182 barrels of beer. For four or five months he experienced difficulty in micturi-

tion; his urine was scanty, and contained a large amount of General anasarca followed, causing dyspnea. An ulcer albumen. formed above the left ancle, which relieved the cedema of the legs and scrotum, and produced considerable amelioration of the general symptoms. Under treatment his urine became increased in quantity to 24 ounces per diem; its Sp. Gr. was 1020; and it contained 576 grains of albumen, a large amount of earthy salts, and casts. Prognosis unfavourable. The second case was that of a female, aged 40 years, of temperate habits. The menses had ceased for nine months; her abdomen was distended, and her legs ædematous. Her urine contained albumen. Her general health was good. With the use of rest and warmth she became much better. Eight months after recovering from this attack she had a return of the ascites; but recovered again. During the last fifteen months she had remained well. The next case was that of a female 42 years old, who had suffered from rheumatic fever some years previously. After drinking cold water the present attack commenced, by severe pain in the abdomen, with vomiting, abdominal tenderness, distension, and general pyrexia. Constipation and stercoraceous vomiting followed. Opium and chloroform were given. Poultices and enemata were used; and she became convalescent in six days. A short time after its subsidence, the abdominal swelling returned; and the urine became albuminous. Recovery was complete. The last case was that of a patient who. three days after her confinement, having exposed herself to cold, was seized with pain in the abdomen, had constipation and stercoraceous vomiting. The remedies last mentioned were used, and the patient improved. Anasarca followed, as also ascites, which was relieved by paracentesis abdominis. She recovered completely. Dr. W. recommended, in such cases, rest, warmth, drastic and hydragogue cathartics, and diaphoretics as the best remedial measures to be employed. The two last of these cases were complicated with intussception.

By Mr. HARRIS.

Case of extensive Burn of the Abdomen and Thigh, in a boy, eleven years old. The resulting cicatricial contraction prevented

his walking. By making suitable incisions, the contraction was so far relieved as to admit of full extension of the thigh.

By Dr. Parsons.

Cases of Delirium Tremens.-In the first case the moral or "do-nothing" treatment, with abstinence from stimulants, aggravated the symptoms; opiates were useless; the hypodermic injection of morphia failed to procure sleep; a half ounce dose of Tincture of Digitalis warded off impending syncope, but increased the delirium; and sixty grains of Chloral caused the patient to sleep within fifteen minutes after its administration, and during the succeeding twenty-two hours sixteen hours of sleep were thus procured. All medicines and stimulants were then stopped, and complete recovery followed. The next case was treated by the administration of a half ounce dose of Tincture of Digitalis. Dr. Parsons had been induced to give this dose after opiates and hypodermic injections had failed, because of the exhausted state of the patient, as indicated by a weak, irregular, compressible pulse, and by a sense of impending dissolution. In half an hour after receiving this dose the pulse improved, and the patient could lei down. Four hours later a second dose of like amount was given, seven hours of sleep followed, and convalescence was established.

By Mr. A. M. Bligh.

Case of Strangulated Hernia.—Operation. Death. The patient, a female of middle age, had suffered from rupture for three years. The hernia had formed four days previously. All other means having failed, operative interference was decided on. She appeared to rally after the operation, but sank on the ensuing fourth day. The sac was not opened during the operation; and, at the autopsy, a portion of intestine was discovered still within the sac.

By Dr. J. W. IRVINE.

Case of Grangrena Senilis.—Amputation above the line of demarcation was performed, at the patient's urgent request; but death followed fourteen days later.

By Mr. Townson.

Case of Ulceration of the Larynx.—Mrs. P., 52 years of age, suffered from aphonia in July, 1868. During March, 1869, dysphagia and dyspnea supervened. She had mucopurulent expectoration. The fauces appeared red. She died in April, 1869. Inhalations of carbolic acid, belladonna, and chloroform were employed; and afforded some relief. Tracheotomy was not allowed. There was no history, nor any evidence of pulmonary tubercle; and no suspicion of syphilis. At the autopsy, the larynx exhibited an ulcer, situated between the vocal cords on the right side.

By Mr. Lowndes.

Case of attempted poisoning by Creue's disinfecting fluid.—
This fluid contains 423 grains of chloride of zinc in each ounce.
The poison had been administered in Gin; an ounce of which, on analysis, yielded 33 grains of the poison. There were 56 grains of the poison extracted from the vomited matters.* The patient was a female, 50 years of age. Treatment consisted in the exhibition of stimulants; and she recovered. Most of the poison had been vomited before Mr. Lowndes arrived.

By Dr. Nottingham.

Case of deficient anterior wall of the bladder.—The posterior wall of the bladder was seen extruded into the suprapubic region; and the openings of the ureters were readily discernible. A constant trickling of the urine, with a slight mucous discharge, was present; and an occasional stream flowed from the right ureter. The penis was very small, and the testicles were imperfectly developed. He had occasional erections and emissions. was an arrest of development of the abdominal wall in the pyramidal space, with a corresponding deficiency of the anterior wall of the bladder. The patient gave the following history of his case. That, about a year ago, he fell from a building two stories high and received a severe contusion over the region of the bladder. Suppuration and sloughing of the integuments ensued, and was followed by extrusion of the viscus. Various unsuccessful

[•] This analysis was made by Dr. Brown, Lecturer in Chemistry at the Liverpool School of Medicine.

attempts at an operative amendment of this deformity had been made. Prior to the accident he could retain his urine for about an hour at a time, and was able to work as a stone-mason.

Case of Excision of the Knee-joint.—In this instance Dr. N. had performed excision of the knee on the patient, a girl, 15 years old, five years ago; and a firm anchylosis followed. The limb was now, however, six inches shorter than its fellow.

By MR. HALL.

Cases of Puerperal Peritonitis.—The first was a breech presentation, in which the child was very large, the labour very tedious, and delivery was effected with difficulty. This child lived thirty-six hours. Whenever abdominal tenderness was detected warm fomentations were applied over the abdomen, the bowels were emptied by an enema, and the vagina was washed out by injections containing antiseptics. Calomel in small quantity, and combined with large doses of opium were administered; but, there was, nevertheless, insomnia with great thirst and irritability of the stomach. The hypodermic injection of morphia succeeded in procuring sleep, and allaying vomiting. Death took place suddenly on the seventh day after delivery. In the next case, the same treatment was employed, except that the hypodermic injection was used earlier than before. This patient made a good recovery.

By Mr. PARKER.

Case of $N\alpha vus$ of the upper lip and right upper eyelid in a boy, 13 years old, was exhibited. The vascular engorgement was confined to the subcutaneous tissue.

Case of traumatic Paralysis Agitans.— The patient, a policeman, aged 32 years, had received a blow on the head with a brick seven weeks previously. He continued on duty for two weeks after the accident; but within a week shaking palsy of the head ensued. When in the erect position this was constant, while in the recumbent posture it was much less marked, and was absent during sleep. Voluntary motion of the head was retained, though to a somewhat impaired extent. Iodide of potassium, tonics, blisters, and setons had been tried without avail.

III. PAPERS READ.

- 1. On the administration of Stimulants in disease, by Mr. Townson. The author remarked, that it was rarely, if ever, necessary to administer stimulants in the following diseases:—fevers, pneumonia, rheumatic fever, delirium tremens, erysipelas, or post partum hæmorrhage. That they were injurious in the treatment of fractures, in dyspepsia, and during lactation. That they were pernicious when given for children's ailments, but were sometimes necessary—in the form of wine-whey—in the treatment of infantile pneumonia. Mr. T. preferred medicated to alcoholic stimulants, when the condition of the patient required them; and stated that the total abstainer was less liable to dyspepsia, hepatic disease, senile gangrene, ulcerated legs, and all the ailments arising from depraved nutrition.
- 2. Remarks on Hospital Mortality, by Dr. Nottingham. In this paper allusion was made to the Continental Hospitals, especially those of Italy, Spain, and Portugal; and it was stated that in these institutions more space was allowed to the convalescents for recreation and healthy occupations, than was afforded by the English and French establishments. Dr. N. advocated the need of special Hospitals for Drunkards and Dipsomaniacs. He also endorsed the late Sir J. Y. Simpson's opinion as to the increased rate of mortality in hospital, as compared with that in private practice (especially among amputation cases), and in old hospitals as compared with new ones. He further recommended the cottage-hospital plan, and preferred iron or wooden huts to massive stone or brick palaces.
- 3. On the administration of Carbolic Acid in Enteric Fever, by Dr. Parsons.*
- 4. On the proper mode of vaccinating, by Dr. Lodge. In this paper the author recommended the use of a lancet with a grooved blade. He dwelt particularly on the necessity of vaccinating in, at least, four places; and read a table of statistics, showing that the mortality from small-pox in persons who had been vaccinated decreased as the number of cicatrices increased.

^{*} This paper was fully reported in the Liverpool Medical and Surgical Reports. Vol. iii. 1869, p. 129.

5. On Hysteria, by Mr. Wigglesworth. This term was considered to be a misnomer; and Mr. W. defined the disease as "a disturbance of the healthy balance existing between the mind on the one hand, and the sympathetic and systemic nerves on the other - the result being that not only is the muscular system overpowered and brought into captivity, being made to perform erratic movements - but that the skin is subject to this disturbed condition and becomes the arena of painful affections. Further, that the various organs of the body present the same train of symptoms which are to be found in organic disease, and of these none more so than the uterus and its appendages." The author divided the disease into three varieties, - the active, passive, and surgical. the first division (active Hysteria) he included hysterical convulsions, "cough, hiccough, sighing, and all those conditions into which the muscular system is called actively into play." In the second division (passive Hysteria) were to be found "the so-called inflammations, hypercesthesia and ancesthesia, and the various morbid conditions of the organs of the body so frequently met with in its subjects." Surgical Hysteria, said Mr. W., sprang from the "peripheral irritation of a nerve."

In active Hysteria, according to this author, "anything that acts suddenly upon the mind, and upsets its healthy balance, produces an hysterical attack; and when the mind reverts to its former healthy condition the attack for the time ceases—the mind is yielded up to the body. Sometimes the mind is so suddenly and completely upset, so taken by storm, that the attack commences before the mind has had time to recover itself from the shock." He also remarked that, "in weak-minded patients, the mind remained in abeyance, allowing the body to continue its convulsive actions until it is either wearied out, or the mind is suddenly brought back to its healthy condition." Hysteria was most frequent, moreover, in those of a nervous temperament. Mr. W. stated that hysteria was not met with among those whose vocation in life keeps them well employed in body and mind." recommended the practitioner to use the greatest tact in disabusing the patient's mind of the existence of any organic disease, to secure if possible occupation for both mind and body, cheerful society. &c.; and, above all, to employ, in Active Hysteria, the cold water douche freely.

6. On the treatment of Delirium Tremens with Hydrate of Chloral, by Dr. Colles Anderson.

The author related eight cases he had thus treated,—the dose varying from 25 grs. to 90 grs. He endorsed Dr. Richardson's opinion, that the chloral required in order to induce sleep is in proportion to the weight of the animal. One dose of Hydrate of Chloral effected a cure in two cases of Delirium Tremens; two doses had this effect in three cases; and three doses were successful in one instance. In one case 70 grs. of Chloral having failed to procure sleep, a half ounce dose of Tincture of Digitalis, was given on the following day; - four hours of sleep followed, and the patient was perfectly well in seven days thereafter. In another instance Chloral was twice administered, in doses of 60 grs. and 90 grs. respectively. Sleep of short duration followed each dose. but delirium returned on the patient's awakening. Liquor Opii Sedativus 3 ss. and Tincture of Digitalis 3 ss. were then given and procured sleep, but did not check the mania. The patient was sent to an asylum.

In some of these cases, remarked Dr. A., sleep commenced in ten or fifteen minutes after the administration of the Chloral; and in one instance it was delayed for three hours. A flushed countenance, congested conjunctive, and diaphoresis, occurred in all the cases. No alteration of the pupil was observable, and the drug did not excite vomiting. In two only out of these eight cases of Delirium Tremens did Chloral fail to produce a cure.

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LIVERPOOL

MEDICAL AND SURGICAL REPORTS.

REMARKS ON UTERINE FIBROID TUMOURS AND POLYPI; THEIR PATHOLOGY AND REMOVAL.

BY THOMAS SKINNER, M.D.,
PHYSICIAN TO THE LIVERPOOL LYING-IN-HOSPITAL AND LADIES' CHARITY.

In Obstetric surgery and practice, there are no operative measures which have undergone a greater change than those for the removal of uterine fibroid tumours; and let me add, that our text-books are still wofully deficient in conveying to the professional mind a sound and practical statement of the pathology of such growths—I mean such a vital and physical, such a truly surgical pathology, as will aid us in the necessary steps to remove them, and which ought to guide us when it is best to let them alone.

The following remarks are not so much the result of bookreading, as of actual observation and experience in the removal of fibrous tumours and polypi of the uterus; and, first of all, let me say something as to their pathology, especially as relates to their general management and removal.

I.-PATHOLOGY.

Most pathologists are agreed that these tumours have their origin in the fibro-muscular tissue, or the tissue proper, of the uterus, and that they are a simple hypertrophy of the fibrous

The late Sir James Simpson held the opinion, and it is more than probably correct, that all fibroid tumours of the uterus, whatever their ultimate destination, have their origin in the substance of the parietes of the uterus—that all of them are, at one time of their existence, intramural fibroid tumours. As they grow, in like proportion does the uterine wall in which they are developed grow also; the same as occurs in pregnancy. In accordance with the situation of their origin, namely, whether it is the fundus, the body, or the cervix-uteri, and in accordance with their proximity to the peritoneal or to the mucous surfaces, so is their ultimate destination. If they originate in the fundus and nearer to the serous than the mucous surface, as a rule they are more commonly gregarious than solitary, and they emerge from the uterine fibrous tissue, pushing the peritoneal coat before them, until they form the tuberculated and irregularly lobate masses, so characteristic of large fibroid tumours of the fundus uteri; or, ultimately eneucleating themselves, they become pediculated, and hang pendent from the uterus; or they even sometimes drop loose into the cavity of the abdomen. If they originate in the body of the organ, and the serous is the proximal surface, their course and destination is the same as I have already described. Of those originating in the fundus and body of the uterus, and whose proximal surface is the mucous or that of the uterine cavity, they are almost always solitary or single; and however sessile they may be in their attachment to the substance of the uterus, and however slow the process of eneucleation may be, still the destination or termination of all of them is to become intra-uterine fibroid polypi. Those originating in the cervix uteri I believe to be of less common occurrence than those in the fundus and body; but they are far from infrequent. They are almost always single, and tend like the others to become intra-uterine fibroid polypi. To all intents and purposes uterine fibroids are foreign bodies, and they

[•] The term simple hypertrophy is a dangerous one, and has, doubtless, largely conduced to the idea that fibroids, like other simple hypertrophies, are amenable to deobstruents, and can be absorbed. To all intents they are abnormal growths, false tissue, unlike any tissue surrounding them, as they are non-contractile and incapable of performing any useful, or any function whatever; besides, they are cystic, and the matrix is a false membrane, while in their nature they are essentially destructive.

act as such in the system. Like all foreign bodies, they follow the law which determines them to the nearest surfaces, whereby they may most easily and expeditiously obtain an exit from the body, or cease to disturb life and comfort.

All of the intra-mural tumours, especially those which tend towards the uterine cavity, have a loose fibro-areolar attachment to the substance of the organ; indeed, they are simply embedded, so to speak, in cellular tissue. Dissect off the mucous covering, and with a twist of the thumb and fingers, a cork-screw, or a pair of forceps, they may be dislodged, that is, by traction combined with torsion. This can be accomplished quite easily before the tumour has become pediculated, that is, when one half, third, or three quarters are intra-mural and the remainder intra-uterine, the essential point being, to divide the mucous membrane all round the tumour where it is reflected over the fibroid. The distal surface is best divided by the aid of Simpson's polyptome, the proximal by Grimsdale's intra-uterine scissors, or a scalpel. Torsion is then safe, as the mucous membrane cannot be torn from the healthy surface of the organ.

There is another and a most important point in the pathology of fibroid tumours and polypi of the uterus which must not be passed over, and that is, their growth, absorption and decay, in other words, their natural terminations.

I shall not attempt to discuss these disputed points, but I shall briefly state what my observation and experience have led me to believe. That they grow, no one doubts; and that they have periods of active growth and periods of rest, I am certain. I am equally certain that the natural tendency to grow, to increase in bulk and density, never entirely leaves them as long as they have an attachment to the matrix which first conceived them, and while they themselves are possessed of life and capable of receiving nourishment from the system. I have never come across a particle of evidence to lead me to the conclusion that so much as one grain of a fibroid tumour ever was absorbed by a natural process, that is, taken back again into the circulation. The proper substance of the womb, only after parturition, does undergo fatty degeneration, and subsequent disintegration and absorption, as also hypertrophy

4 REMARKS ON UTERINE FIBROID TUMOURS AND POLYPI;

of the natural substance from subinvolution. Inflammatory induration, or hypertrophy from exudation of lymph into or around the proper substance of the organ; effusions of serum and extravasations of blood, and such like enlargements, are constantly being absorbed; but the substance of a genuine fibroid—never! There is nothing more easy than to convince a patient of the possibility of this termination by absorption, as they are only too willing to believe anything favourable of their case, especially if supported by medical authority. And as to the patients' own feelings and ideas about their being either larger or smaller, it is simply so much leather and prunelle.

Almost all of those medical men who believe in the absorption of uterine fibroids found their observations, not on the naturalterminations of the abnormal nutrition, not on the natural history of the complaint itself, but on certain results which they think they have obtained after the administration of certain deobstruent medicines, or medicines capable of removing enlargements of glands and other organs, hypertrophies of natural tissues, and inflammatory indurations and swellings. These agents act in a variety of ways, but invariably by stimulating a natural process the processes of resolution, absorption, and the like. But, before uterine fibroids can be absorbed by a therapeutic agent, it would be well to know that Nature can and does effect such cures of them; it would be well to have proof that fatty degeneration, disintegration, atrophy and absorption are among the natural terminations of fibroid disease. If absorption is not one of the natural terminations of the disease, then all the deobstruents on earth will not remove The most flattering view which can be taken of the conclusions come to by the use of bromide of potassium and like agents is, that the post has been mistaken for the propter hoc. successful cases reported are so ridiculously few, so doubtful as regards their real nature, and the result so questionable, it is remarkable that medical men, of known probity, of genius, and of high standing, should make so great exceptions the rule of practice. The natural process of eneucleation, already alluded to, is one of the terminations requiring to be enumerated. I will only add, in connection with it, that the condition of pregnancy considerably

affects eneucleation by hastening it, sometimes, however, at great risk to life from inflammation or hæmorrhage, or both, and by the risk of abortion, miscarriage or premature labour. In consequence, marriage, as a rule, is not advisable whilst a uterine-fibroid remains unremoved.

Uterine-fibroids are liable to undergo various forms of change in their elementary substance. By nature almost cartilaginous. they sometimes, at least in parts, become calcareous and even osseous. They sometimes contain small cysts or crypts or cells, with watery or colloid contents. If intra-mural or sessile, they are very liable to attacks of inflammation from trifling, probably constitutional, causes. Hence the danger of meddling with them unnecessarily, and the necessity, when removing them, of making sure and quick work. If intra-uterine and pediculated, the mucous covering is liable to ulcerate and to bleed freely, apparently from friction or from pressure when presenting at or through the os uteri. It has been and still is maintained by many, that these tumours undergo absorption and atrophy at the cessation of menstruation. I maintain that they do not. They often do become quieter; they cease to grow, and the concurrent hæmorrhage and leucorrhœa may cease or become less; but that the fibroid itself ever becomes less or absorbed I do not believe; on the contrary, I have oftener seen them increase rather than decrease in growth, at the change of life. Lastly, they may terminate in death by inflammation of their substance, as also of their areolar or mucous envelope; they then sphacelate and may be thrown off by suppuration or ulceration, according to their locale.

The most successful line of treatment, whether medical or surgical, will be that which is founded on the above natural history and terminations, wherein the processes of atrophy and absorption play no part whatever.

Before concluding this brief notice of the pathology of these tumours, I must allude to a very peculiar and common feature in their natural history, namely, the great tendency which they have to be accompanied by obstinate and excessive uterine hæmorrhage.

I was always taught to look upon uterine hæmorrhage, arising from whatever cause or condition, as something not only to be

avoided or prevented, but to be stopped. I have met with many old, wise, and excellent practitioners who still entertain, after a long life of practice, the notion that, in attempting to stop the usual hemorrhage which accompanies the generality of fibroid tumours of the womb, they are acting secundum artem. every deference, I beg to differ. Ask any patient who is the subject of a uterine fibroid, particularly of a large tumour, whether her general health is best when she is little poorly or when she is much so — when she loses little or no blood and when she loses much? Her answer will almost invariably be the same, namely, "When she loses much." Exceptional cases are doubtless to be found; but I have never come across an instance, where loss in some form or other of discharge, was not salutary rather than As regards the chances of hæmorrhage after the otherwise. removal of intra-uterine polypi, much has been said; and still more has it been foolishly dreaded. The past twenty or thirty years of practice have put those fears in the grave, and I trust that they will never again bedim our mental and surgical vision. In other words, there need not now be the slightest fear from the hastiest removal of a fibroid tumour, if in any way pediculated, and, to use a homely expression, come-at-able. The danger lies chiefly in delay, either before or during the operation of removal, or both. In laying down this rule of practice, I except all cases complicated with pregnancy, abortion, miscarriage or labour, and where inflammatory or other conditions are present, necessitating a special line of treatment, according to circumstances. brings me naturally to the chief part of my subject:-

II .- THE SURGERY OF THEIR REMOVAL.

First—As regards the subperitoneal variety. Some operators are sanguine and bold enough to attempt their removal. For my own part, I do not think the time has yet arrived when they can be considered as legitimate objects of surgical research or practice. I have not seen the case which I could recommend for operation; and I have never seen any case operated upon that did not terminate fatally. I have only seen two such, and I do not care to see any more.

Second—As regards the second variety—the primary condition of all varieties—the *Intramural*. I believe that, as a rule, the less they are meddled with the better. I am fully aware that various operations have not only been recommended, but actually put into execution by many eminent obstetric surgeons, such as gouging, the application of the potential and actual cautery, incising, and such like operative measures. I look upon the practice as rash, to say the least; and if the profession was put in full possession of the undoctored statistics, we would find that in nine cases out of ten, where the operation was at all indicated, the result has been death.

Third—As regards the third variety, the Submucous, or Sessile, those which are immediately beneath the mucous membrane of the uterine or cervical cavity, but which have a broad base of attachment to the uterine tissue, more may be said; as they are a more hopeful kind, though sufficiently treacherous to require their being approached with the greatest care, and apprehension as to There is only one method of removing such tumours, and that is by eneucleation—either by means of potassa fusa, or by incision and subsequent evulsion. The latter method is now, I believe, the only one ever practised. The late Sir James Simpson frequently practised it with considerable success, and Dr. Matthews Duncan, of Edinburgh, in one of the best and most practical monographs which he ever wrote, has given a very clear and succinct account of this class of cases, and the best way of dealing with them. The article I allude to will be found in the Edinburgh Medical Journal, for 1866-67. I only wish I could give as flattering an account of my experience as Dr. Duncan does of his. I have seen many cases such as he describes, but I have not dared to meddle with more than one of them in the way he advises; and, though terminating fatally, as the case is instructive, I now briefly record it.

Miss B., aged 28, the matron of a charity in this town, was the subject of a large fibroid tumour, $3\frac{1}{2}$ lbs. in weight, attached to the posterior wall of the uterus. From the profuse menorrhagia, which was occurring every three weeks or fortnight; from the utter impossibility of checking it, and from the fact that she

could not retain her situation as she was, I was consulted as to what had best be done. I took into my counsel my excellent colleague, Dr. Grimsdale, and we came to the conclusion that the tumour could only be removed by gradual eneucleation. described by Dr. Duncan. In order to facilitate matters we incised the cervix uteri, and dilated slightly with the finger, leaving a Some days afterwards Dr. Grimsdale plug of charpie in situ. made an incision through the uterine lining membrane of the tumour, and we distinctly felt the smooth hard surface of the tumour through the lips of the wound, which was about three quarters of an inch to an inch long. The wound was plugged, but in spite of our best endeavours it closed again during an attack of acute metritis, following, in my estimation, upon some cervical injections intended to prevent septic poisoning. After a tedious convalescence, the patient was sent to New Brighton for change of air, and soon after her return we determined to make a fresh artificial opening in the site of the old one. I made a free and deep incision, about two and a half inches long by about an inch deep, upon the tumour, and both Dr. Grimsdale and myself were satisfied that we had done enough for the present. Although the patient did remarkably well for about a week or ten days, and although she took her food well and all signs of metritis kept' away, the wound completely cicatrised. About this time a profuse serous hæmorrhage set in, which could not be stemmed, and the patient sank from exhaustion.

There were two things to be regretted, namely, the uterine injections which brought on the metritis, and the peculiar circumstances of the patient. On the whole, I am inclined to think favourably of this mode of treating the Submucous or Sessile variety of fibroid tumours of the uterus; and I should not deem my past want of success a sufficient reason for depriving patients of what must often be the only hope of cure they have from an intolerable malady, provided due care is taken in the selection of cases for operation.

As regards the fourth variety, the intra-uterine fibroid or polypus of which I give a few illustrations, there can be no doubt that they are the easiest to deal with, because they are pediculated and not sessile,—and they are almost always single. What I have

said before I now repeat, - most operators used to approach such tumours by operation in fear and trembling, - fear on account of the dangerous hemorrhage likely to follow the sudden removal of them. If there is one point in their pathology more clearly proved than another, it is this—that the concurrent homorrhage which accompanies most such tumours does not come from the tumour alone, but from the entire uterine cavity, which is always enlarged or extended. It is also certain that the tumour simply acts as a cause of irritation for the determination of the homorrhage—it acts in short as a foreign body, wishing to get out. If so, what is the indication? Instant removal! Up to a very late date, however, the only method of removal was the ligature -a method which required for its completion from one to three weeks, according to the thickness of the pedicle. The modus operandi was by means of whip-cord and Gooch's double canula. ligature having been successfully applied, it was then tightened as much as the strength of the cord would admit; and each day thereafter it was again tightened by means of a winch or otherwise, until the pedicle was divided, partly by strangulation and partly by ulceration. Besides the dangers from septic poisoning, irritative fever, and acute peritoneal or metritic inflammation. possible and probable on such a procedure, an actual experience of many years has now put it beyond doubt that the more immediate the removal of a pediculated fibroid, or fibrous, or any kind of pediculated tumour within the uterus, the better; -- consequently, those who have had the largest experience in the removal of such tumours never resort to the ligature, but proceed seriatim to its removal. The modes of operating may be briefly stated as follows: -

- 1. Preliminary Steps.—In order to facilitate the removal, the first step to be taken, is to open up the passages for the introduction of the necessary instruments, and to obtain greater certainty as to the position, relations and attachment of the tumour and its pedicle. This, we are all aware, is best obtained by the introduction of sea tangle and sponge tents, and, if necessary, by incising the cervix uteri.*
- I beg to direct attention to a very useful instrument for introducing tents of laminaria digitata, an illustration of which, on a reduced scale, will be found on Plate 3, Figs. M

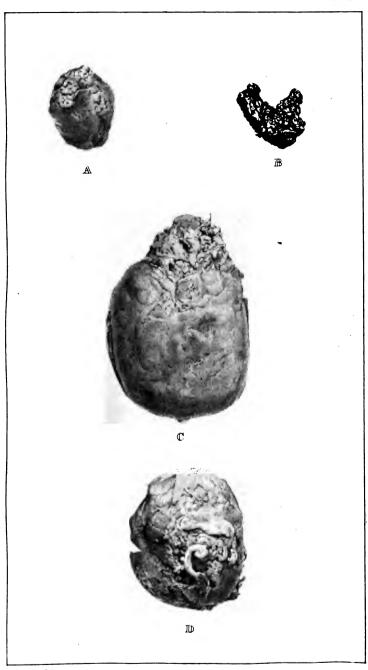
10 REMARKS ON UTERINE FIBROID TUMOURS AND POLYPI;

2. Immediate Steps.—As a rule, the fixing of the tumour by means of a volsella, or by means of Dr. McLintock's corkscrew, which, though common-place, is a most efficient instrument, and generally easy of application; transfixing with a cord, or placing a noose over it is next required. As regards volsellæ, there is no instrument in surgery worse made, simply because they are almost always made too sharp in the prongs. prongs are generally made round, small and sharp - whereas. they ought to be square-shaped, tapering and sharp, combined with strength in all their bearings. As a rule, they are too long also between the joint and the prongs.* The small and sharp pronged volsellæ do not keep their grip; as soon as traction is made use of, they tear their way out; while the square-shaped ones keep their hold like bull dogs. The tumour, being firmly grasped, is pulled as low as it will admit of, and held there, whilst an ecraseur is passed over it, which may be accomplished in various ways. A noose may be made with the wire or chain and passed over the handles of the volsella, and ultimately over the tumour up to the pedicle, which latter may then and there be severed. Sometimes, the pedicle is so thick and tough that the division is not so easy as à priori we might be disposed to imagine; as in the removal of the specimen (Plate 1. fig. C.) where the pedicle was two inches in diameter, and fibrous throughout. Such being the case, our next best step is to divide the pedicle immediately above the wire or chain of the ecraseur, with blunt-pointed curved scissors; or with a blunt-pointed curved bistoury, protected with lint where the cutting surface is not required; or, best of all, with the ingenious polyptome of the late Sir James Simpson, (Plate 3. figs. K and G.) The two tumours (Plate 1. figs. C and D) were

and H. It was made specially for me by Mr. Wood, of Church Street, in this town. It is on the principle of a porte signille, with an angle at the distal extremity corresponding to the axes of the uterine and vaginal canals.

On Plates 3 and 4, will be found reduced representations of the most useful small and large volsells, in common use by the late Sir James Simpson. They have three prongs instead of the usual complement of two. The large sized volsella is straight, is ten inches long, is made in two halves, and locks the same as midwifery forceps. The small size is six and a half inches long, and is curved.

[†] Or, the wire or chain may be passed up looped or unlooped by means of metallic guides; but, as a rule, there is no instrument or guide equal to the fingers of both hands.

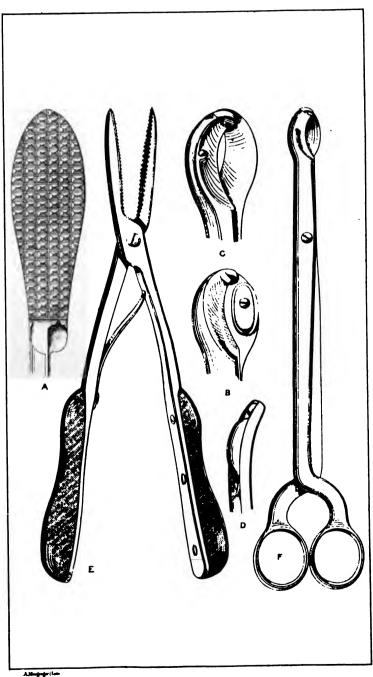


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DRAWN TO ONE-FOURTH SIZE OF ORIGINALS.



PLATE 2.



A.B. G. & D. FULL SIZE

E. & F. DRAWN TO QUARTER SIVE

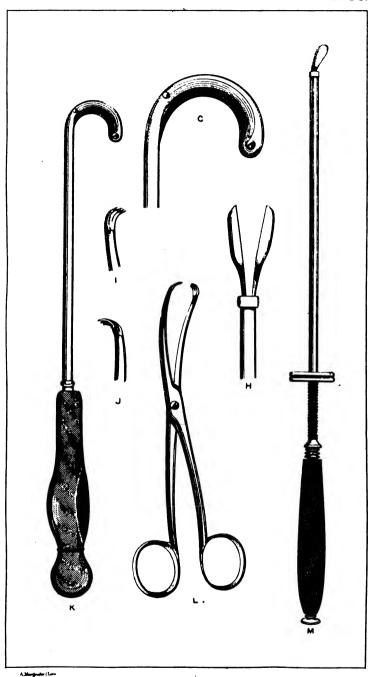
severed from their attachment to the uterus in a few seconds by means of this instrument—an instrument positively harmless to the surrounding parts.* The best form of intra-uterine scissors for the purpose (Plate 2. fig. F.) are the invention of my esteemed colleague, Dr. Grimsdale, of whose manipulative dexterity and surgical skill in the removal of such tumours it would be impossible to speak too highly.

Some of these pediculated tumours admit of being removed by traction with the fingers. I may instance one case of a patient of Dr. Swinden's, of Wavertree: a lady who had flooded more or less for three weeks after her confinement, and who was in articulo mortis, when I saw her with Dr. Swinden. A pediculated fibroid, the size of a pigeon's egg, was attached to the fundus uteri. By gradually dilating the parts, I got my hand in the vagina, and my fore and middle fingers into the uterus. By passing a finger on either side of the tumour, and finding that the pedicle was small and yielding, I pulled it off with a twisting motion. All hæmorrhage ceased; and the patient, from the last stage of anœmia, made a perfect recovery. In another case of a similar kind, which I lately saw with Dr. Swinden and Dr. Le Gros, of Wavertree, I removed a small fibrous or warty growth, along with a few mucous polypi, after the passage of sponge tents, by means of the nail of my right middle finger. In this instance the patient was quite as anomic as the last. All hæmorrhage ceased with the removal of these trifling offenders. As an aid in the removal of such polypi, and of rugous and hæmorrhagic conditions of the lining membrane of the uterus, the uterine scrapers of Recamier. Simpson, and Locock are most useful.

There is still one other class of uterine tumours admitting of immediate removal, though not pediculated. They have no name other than fibroid polypi; they are really intra-mural tumours of the sessile or submucous variety, but they are small, almost always single, generally limited to the cervix-uteri, and not infrequent in their occurrence. They are generally of an ovoid, almond, or walnut shape, and one extremity generally projects into the cavity

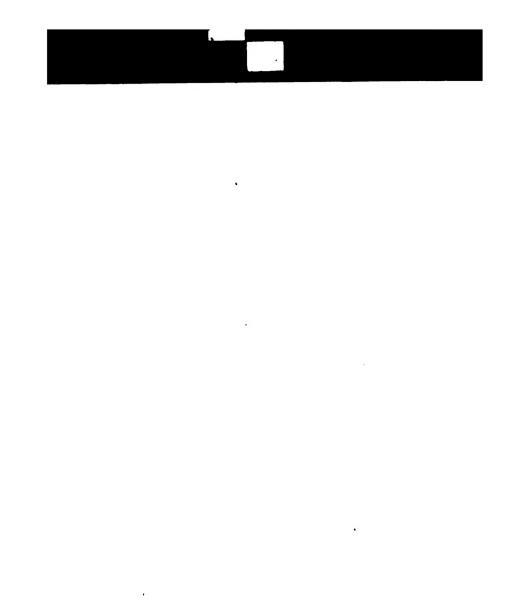
^{*} Whilst using the polyptome or any instrument for dividing the pedicle, the latter can scarcely be too much put upon the stretch.

of the cervix or presents at the os uteri. I have seen several of this variety, and I have assisted the late Sir James Simpson in their removal. I have already alluded to them, and their mode of removal, in the first or pathological part of this article. I shall only repeat that, if come-at-able, they are perfectly safe to remove by Simpson's polyptome, and torsion, or by crushing with a pair of forceps I got made for that purpose, and for simplifying and shortening the operation of craniotomy. (See Plate 2, figs. E. and A.) It would appear that the life is easily crushed out of these growths; the curious part of it being, that, although they themselves are easily destroyed, it is sometimes very difficult to get at them to kill them, without endangering This leads me to allude to another the life of the patient. method of removing this growth; and I commence doing so by asking a question of myself. Is it wise to partially remove a fibroid polypus? Undoubtedly it is; and the more we can remove the less there will be, as a rule, of hæmorrhage thereafter. I remember a case, in which Dr. Grimsdale assisted me, at Waterloo. We broke two strong wires, and at last succeeded in passing a strong chain ecraseur over all that was come-at-able -- about onehalf of the substance of the tumour. We removed this mass; and the patient, who, for ten or twelve years before had flooded at each menstrual period, never more lost a drop of blood. Previous to the operation, a tumour of the size of a cricket ball was felt in the hypogastric region. On examination of the patient, about eight or nine months afterwards, there was no trace of any tumour whatever; nothing ever came away at all resembling a solid substance. This case was the first to lead me to the conclusion that it is sound practice, in severe hæmorrhagic cases, to remove as much of the tumour as is possible; and, if it cannot be cut with the polyptome or by the ecraseur, it may be crushed out of existence, or placed hors de combat, by the instrument represented in Plate 2, fig. E, or by a combination of crushing and cutting. As regards the justice and safety of this line of treatment, I know that it was practised by Sir James Simpson, by Mr. Baker Brown, in his gouging process, that it has been practised by McLintock, of Dublin, is patronised to a certain extent



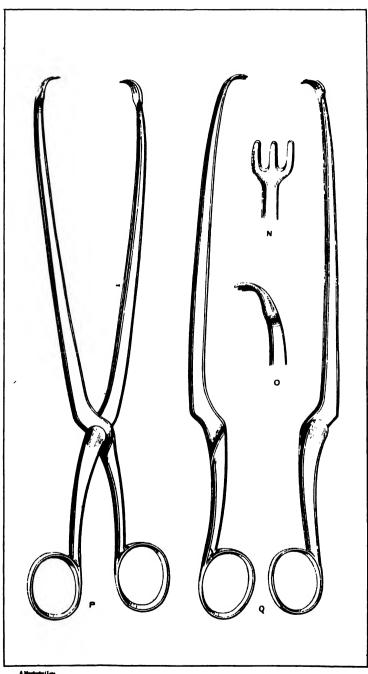
G. & M. FULL SIZE

I. J. K. L & M. DRAWN TO QUARTER SIZE



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N. & O. FULL SIZE

P. & Q. DRAWN TO QUARTER SIZE

by Dr. Matthews Duncan, and that it has forced itself upon various practitioners, as recorded in our journals. One of the most instructive examples will be found in the *Transactions* of the Obstetrical Society of London, vol. x., where Dr. Hall Davis removed part of a large intra-uterine fibroid tumour, $6\frac{1}{2}$ ounces, then excised in pieces 3 ounces, and ultimately a mass, which was thrown off entire, weighing $8\frac{1}{2}$ ounces; in all, the tumour weighed 18 ounces. The lady made a perfect recovery. Such a case is very encouraging; but, as our American cousins would say, "the conservative drag after all is a valuable institution."

Regarding the tumour, Plate 1, fig. C, which weighed halfa-pound, I must say a word or two. The late owner of it consulted me on account of a draining menorrhagia three years ago. As the complaint resisted the usual and best remedial measures, I suspected organic mischief. On examination I detected a small intra-uterine polypus, about the size of fig. A, (same plate). I told the lady there was nothing for it but a surgical operation. I saw no more of her for three years, two of which she had spent under the care of a homeopathic physician in London, who told her that a surgical operation was quite unnecessary, and that he would cause the tumour to be absorbed. Of course she believed this, even although the monthly and fortnightly flooding went on the same. After being two years treated thus, circumstances forced her back to Liverpool, and she received advice, first from one and then from another homeopath, for another year, but all to no purpose. As the patient's life was ebbing, and all but in articulo mortis, she and her friends begged of me to take her case in hand. I took counsel with my friend Dr. Grimsdale, and we determined at once on removal of the tumour, which was executed in about twenty minutes, by means of Braxton Hicks' ecraseur, and Simpson's polyptome. From the time of the operation until now, nearly nine months, she has never lost one drop of blood, or ever "looked over her shoulder." The result of three years of homeopathic absorption by means of specifics was, that the tumour grew from about half-an-ounce to eight ounces.

The tumour, fig. B (one quarter the eal size), like a cauliflower.

is rare and peculiar, and is interesting, in that it was originally intra-uterine, was extruded from the os, giving rise to excessive pains resembling labour or miscarriage, and that its extrusion was accompanied by a very great show of blood. The patient was a companion to two old maiden ladies, and I was consulted, the character of the young lady being suspected. I found this tumour protruding from, and attached by a pedicle within the cervix. I detached it with curved scissors, and showed it to the ladies; upon which they both exclaimed, "they were certain all along the girl was innocent!"

The tumour, fig. D, plate 1, weighed four ounces, and was removed from a married woman aged sixty, being her "first born." The cervix-uteri had to be incised, and a stroke of Simpson's polyptome did the rest.

In conclusion, I shall enumerate the necessary armamentaria in the removal of fibroid tumours and polypi. The uterine sound or probe is most useful in diagnosis, and for measuring the probable size and even weight of the tumour. From the length of the cavity, one can frequently guess correctly the weight of the tumour. The wire ecraseur of Dr. Braxton Hicks, and a chain one also: Simpson's volsellee, large and small, and his polyptome; Grimsdale's intra-uterine scissors; strong, blunt-pointed curved scissors. for incising the lips of the cervix-uteri, if necessary; a small uterine syringe, for homostatic injections; one or more uterine scrapers: my own polypus crusher, and a small and narrow pair of midwifery forceps, with sponge and laminaria tents, and their guides or introducers; wire and other ligaturing material; sponges, and an ordinary pocket case of instruments, may all be required in the removal of a single fibroid tumour or polypus. anywhere within the os uteri. In some few instances, additional instruments are required; those mentioned, however, will generally meet every requirement, especially where the operator is up to his work. I have not mentioned the vaginal speculum, because in tumours of the kind treated of, it is rarely of any use.

THE EFFECT OF IODIDE OF POTASSIUM ON THE ELIMINATION OF LIME SALTS.

BY WILLIAM CARTER, M.B., B.Sc., LL.B., M.R.C.P.,
PHYSICIAN TO THE LIVERPOOL SOUTHERN HOSPITAL.

The marvellous rapidity with which organic deposits of a low grade disappear during the exhibition of iodide of potassium, is known to every medical man; huge nodes and secondary deposits of various kinds melting away almost beneath the eye. Many questions naturally arise with reference to the operation of a drug of this kind; such, for example, as "Does the influence which it exerts on those lowly deposits extend to the tissues generally? Does it dissolve and cause the elimination of the normal fibrous, osseous, and other structures to the same extent, and in the same manner, as it does the abnormal deposit, which enters into the formation of a node; or, if not, does it induce a rapid molecular change, and are the molecules, which it takes down from their places in the tissues, as instantly replaced by others? In other words, is there in the normal structures a rapid tissue waste, such as occurs when the iodide lays siege to a node; or merely a more than ordinarily rapid tissue change, destruction being followed by deposition so quickly as to prevent any diminution of substance? or is there neither?"

Questions such as these should be among the most elementary in therapeutics. Yet it must be confessed that the answers to them are as yet far from easy. Answers, indeed, are not unfrequently given, and that, too, in such a ready and off-hand way, as to lead the unwary to suspect that, respecting the particular drug concerning which the question is asked, nothing further can be learnt.

With reference to the drug, whose action forms the subject of this brief notice, want of time has prevented me from doing more,

up to the present, than investigate its effect on the elimination of one of the chemical products of the body, viz., the salts of lime. Does the exhibition of iodide of potassium lead to an increased loss of lime? Or, in other words, does it attack the osseous tissues in the same way and degree as it does the results of periosteal inflammation? For I suppose that the answer to one of these questions will, to most men's minds, be the answer to the other; and that, if it were capable of proof, that a largely increased quantity of lime was excreted during the administration of the drug, there would be no question as to the source of this increase being the bones. The questions proposed, therefore, were: Firstly-does the iodide cause an increased elimination of And secondly—if it does, is this attended with waste, or is there merely a rapid tissue change—elimination and deposition keeping pace with each other? The answer which I obtained, and which was quite different from the one I expected, is contained in the account of the few analyses and experiments which follows.

James M'C., aged 28, a seaman, was admited into the Southern Hospital, under my care, on April 26th, 1871, suffering from syphilitic periostitis. He had very large nodes on the right arm and leg, the head, and elsewhere. For the two days immediately subsequent to his admission, he was kept entirely without medicine, and all his urine collected and examined, and the amount of lime contained in it accurately determined. For the three first days (it was towards the close of the third day that the medicine was commenced), the quantities voided were 50.45 fl. oz. (1440 cubic centimetres), with a specific gravity of 1015; 54 fl. oz.; and 41 fl. oz. He then began to take 5 grains of the iodide three times a day, when the quantity of urine passed was immediately increased to 64 oz. with a specific gravity of 1014; and for the next four days days 60, 40, 64, 64 fl. oz. were passed respectively, with specific gravities of 1015, 1019, 1017, and 1011. During the remainder of the treatment, while a larger dose, viz., 10 grains three times a day, was being taken, the quantity continued about the same, twice rising to 72 fluid ounces, with specific gravity of 1014 and 1016 respectively, and once, during an

attack of diarrhea, sinking to 40 fluid ounces. The most obvious effect, therefore, of the medicine on the urine, was to increase its quantity from an average of 48 fluid ounces to that of 60 fluid ounces daily. Nothwithstanding this increase in quantity, its specific gravity was on the whole maintained, and sometimes increased, showing that the quantity of solids voided was not diminished under the employment of the iodide. All throughout, its reaction continued acid; and the employment of starch and nitric acid showed that the urine, after the first two days, always contained some iodide, the elimination of which must, of course, be taken into account when considering the high specific gravity. In no case was the actual amount quantitatively determined.

Four separate analyses were made; 200 cubic centimetres (about 7.05 fluid ounces) being taken on each occasion. analysis was of urine passed between the 27th and 28th of April. before any iodide had been taken. The entire quantity for the twenty-four hours, was 50.45 fluid ounces (1440 cubic centimetres), the specific gravity being 1015. The following was the method The urine being first evaporated to dryness, the residue was incinerated, so as to get rid of all organic matter. By boiling the ash with distilled water, the soluble salts were next removed. The insoluble residue was separated, dried, and boiled with nitric acid, filtered, and the filtrate treated with an excess of ammonia. The precipitated phosphates were redissolved by an excess of acetic acid, and the lime precipitated as an oxalate by means of oxalate of ammonium. Lastly, this precipitate, after being dried, was submitted to sufficient heat to convert it into a carbonate, and as such was weighed. In the 200 cubic centimetres, there was '148 gramme of calcium carbonate (carbonate of lime, Ca CO_s), which, for the entire quantity of urine passed during the twenty-four hours, would give 1.065 gramme, or about 16.5 grains.

The second analysis was of urine voided between May 1st and May 2nd, while 5 grains of the iodide were being taken three times a day; and the two next, of that passed between the 8th and 9th, and 11th and 12th respectively, after the dose had been increased to 10 grains. The quantities of calcium carbonate on the three occasions were '030, '025, and '070 of a gramme repectively,

which, for the entire quantities voided on the different days, would give 275, 23, and 725 gramme, or about 4.25, 3.5 and 11.2 grains respectively. Quite contrary, therefore, to my anticipations, I found that the amount of lime eliminated during the exhibition of iodide of potassium, was considerably less than when no iodide was being taken. This seemed the more surprising because, from experiments made out of the body, the very reverse was Thus, I submitted two small pieces of dried bone (portions of a human tibia), for five days, to the action of 50 cubic centimetres of distilled water, holding a decigramme (rather over 11 grain) of iodide of potassium in solution, and found, on separating the lime salts, that these were represented by '118 gramme, or 1.8 grain of the carbonate. Whereas the same bone, submitted to the action of a similar quantity of water containing no iodide, for a similar time, yielded only '042 gramme, or '65 grain, a quantity which (when allowance is made for the small amount of ash necessarily present in the filter) is scarcely appreciable. the result of this experiment, I certainly expected that an increased, instead of diminished quantity of lime, would appear in the urine while the iodide was being taken; and the fact that it was not so seems strongly to suggest a caution, not always borne in mind, viz., not to draw hasty conclusions concerning what is going on in the body from the results of chemical experiments performed out of it.

What the result of the exhibition of this drug is on the elimination of other constituents of the urine, such as urea, &c., I have not yet had time to determine, but hope to be able to do so on another occasion.

The analyses were in all cases made by myself, and for their accuracy I alone am answerable. The weighings were kindly performed for me by my friend, Dr. J. C. Brown, D.Sc.

ON SOME FORMS OF DISPLACEMENT OF THE UNIMPREGNATED UTERUS.

By J. WALLACE, M.D. Edin.,

ASSISTANT PHYSICIAN TO THE LYING-IN-HOSPITAL, AND LADIES' CHARITY, LIVERPOOL.

More than two thousand years ago, Aristotle formulated the statement, that "probably all art and all wisdom have often been already fully explored, and again quite forgotten;" and perhaps of no science or art is this more true than of that which is now termed Gynaecology. We are too apt to boast that this department of medicine has only begun to be thoroughly investigated and understood in our own time, and that all the grand improvements and discoveries which have been made in it belong exclusively to ourselves; forgetful of the fact that many of the most ingenious and valued of them were known and practised among the ancients. Herodotus,* for example, tells us that, amongst the Alexandrians, "each physician applies himself to one disease only, and not more; - all places abound in physicians, - some for the eyes, others for the head, others for the teeth, others for the parts about the belly, and others for internal diseases;" and Aetius, who compiled his book in the great library of Alexandria, speaks of the speculum, sponge tents, medicated pessaries, vaginal injections, caustic for ulcers of the cervix, dilatation of the constricted cervix, a sound† for replacing the uterus, etc. Further, in giving directions about the using of instruments. Actius mentions the employment of vapour baths,

^{*} Herodotus, book ii., c. 84.

⁺ The late Sir James Simpson asserted that the sound, spoken of by Aetius and before him by Hippocrates and Avicenna the Arabian, was used only for dilatation, and not for exploration and measurement. In 1657, a probe, used as we now employ the uterine sound, and intended especially for uterine exploration, was described by Wierus and alluded to by Hilken, Cook, and others. In 1828, Samuel Lair read a paper before the Academy of Medicine in Paris, in which he counselled the use of the uterine sound.

medicated and simple, conducted by a reed into the uterus; while Colombat* states that the ancient Greek physicians made use of pessaries, like those just mentioned (air pessaries), of the form and length of the male organ, which is the reason they are called πριαπίσχωτα, or priapiform pessaries; yet in our own day Gariel's air pessary has made his name famous over Europe. It is, however, during the last two hundred years, and especially during the last half century, by the united labours of Ambrose Paré, Récamier, Simpson, Bennet, Scanzoni, Marion Sims, and others, that the diseases of women,—and especially the subject which is treated of in this paper,—have been placed upon a standing of far greater exactitude, both as regards diagnosis and treatment.

Before considering the following forms of uterine displacement, let me refer shortly to the natural position of the uterus in the pelvic cavity. In the virgin state, the womb is two and a half to three inches in length, two in breadth at its upper part, and one in thickness; it weighs eight to twelve drachms, but after parturition from one to two ounces. It occupies the cavity of the pelvis between the rectum and the bladder; its fundus points upwards and forwards in the axis of the brim and a little below its level; while the cervix is attached to and projects into the upper end of the vagina on which it is supported. of the peritoneum fall around it, forming the two anterior vesicouterine, the two posterior recto-uterine, and the two lateral or broad ligaments; connected with these latter are the round ligaments which suspend and retain the viscus in its place. Between the two anterior duplicatures of the peritoneum, is the anterior or vesico-uterine cul-de-sac, and between the two posterior or folds of Douglas is the posterior recto-uterine cul-de-sac. When the fundus of the uterus ceases to form its superior portion and is carried forward into contact with the bladder, while its posterior surface points upwards, we have ante-version; and when at the same time the body of the uterus is bent at an angle with the cervix, we have ante-flexion. In like manner, when the womb is bent back into the posterior pouch or fold of Douglas, and the anterior surface is looking upwards we have retroversion, or

^{*} Diseases of Females, Meig's Translation, v. 152.

retroflexion when somewhat bent on itself. These two forms of displacement are not always in the mesial line, for the organ may also have a flexion laterally to a greater or less extent. In addition, there may be elevatio, or procidentia uteri.

With these preliminary remarks, I pass on to consider the various theories of the etiology of uterine displacements, as based upon the pathological views of different authorities. Ægineta,* entitles his chapter on this subject - "Inflammation of the uterus and change of position;" and this, perhaps the oldest on record, is the theory adopted by Lisfranc and Récamier in the beginning of this century, and one which Dr. Henry Bennet, in his excellent work on Inflammation of the Uterus, has made so familiar to us in this country;—the metritis, it should be added, generally affecting the cervix only, and rarely the body of The constitutional theory follows the inflammatory. but it does not stand the test of modern experience, although it exercises a salutary influence on modern practice. Dr. Tyler Smith looks upon leucorrhea of the cervix as a morbidly augmented secretion from the mucous glands of the cervical canal, and as the primary cause of the secondary diseased conditions of the lower segment of the uterus. The next theory may be called the mechanical one, as advocated by Velpeau, Valleix, Simpson, Kewisch, Ditschy, and others. It is this, that dislocation is the cause of the inflammation, and not the consequence. Sir James Simpson modified that opinion considerably, as shown in his practice; and indeed, from the first, he always inculcated the necessity of first curing the inflammation, before mechanically replacing and retaining the uterus in situ.

Next as to the separate forms of ante-version and retro-version, ante-flexion and retro-flexion,— for I shall look upon the latter as

^{*} Works - Sydenham's Society's Translation, vol. 1., p. 620.

[†] Professor Alexander Simpson informs me he has no good reason for believing that the late Sir James Simpson's views in regard to retroversion of the uterus were ever greatly changed. Latterly he became more cautious in the use of the intra-uterine pessary, "but," says Dr. Alexander Simpson, "I never knew him express any sympathy with the opinions of those who regard inflammation as the cause of all uterine suffering." The interpretation therefore which Dr. Henry Bennet gives of Sir J. Simpson's opinions (Vide Brit. Med. Jour., Oct. 1, 1870), must be considerably modified.

being merely intensified conditions of the former. Ante-versic according to the statistics of M. Nonat, is the most freque form of uterine displacement met with; and this is testified to Bennet, Scanzoni, Thomas, and many others. It is very frequen accompanied by a great degree of retroversion of the cervix. T. arises, according to Bennet, in the same way as all other displa ments of the uterus, from increased weight and volume of so part of the viscus, produced by inflammatory action, -as cervi metritis, and metritis affecting the anterior wall, -or by mor growths, such as a fibroid tumour in the same situation. Mar. Sims pointed out the latter remarkable condition as a cause anteversion or retroversion of the uterus, and showed also the small tumour attached to the posterior wall of the organ below level of the os externum, whether pedunculated or not, will antev it: and vice versa, retroversion will be produced. considers that a relaxation and softening of the parenchymate tissue of the uterus at the junction of its cervix and body are predisposing causes of flexions; and he points out that premat marriage, taking place before the complete development of organs, has much influence in producing flexions of the utert I think this observation sufficiently elucidates the following c of anteflexion. M. Dujes asserts that flexions of the womb may congenital, and may arise (as stated also by Marion Simst) fr short utero-sacral ligaments, or from inflammatory bands Virchow points out) uniting the uterus to the bladder or anter cul-de-sac. M. Dujes also met with flexions in girls who had yet attained the age of puberty. Cases of this kind are rare, I will by and by relate two such. Again, M. Dujes and Mads Boivin point out that the rapid development of the womb, wh takes place about the twelfth year of the girl's age, may sufficien explain how in some instances a more complete development one wall of the organ may lead to a sort of organic incurvation Meigs maintains, and so does Colombat, that, anteversion be

^{*} Diseases of Females, Gardner's Trans., 4th ed., p. 107. † Olinical Notes on Uterine Surgery, p. 237.

t Dr. Barnes and others have recently expressed similar views as to the congruenture of many forms of uterine displacements. (Brit. Med. Journal, Aug., 1871.)

merely an exaggeration of the natural inclination of the womb, varying with the conditions of the bladder and superincumbent viscera, no inconvenience may arise, unless a relaxed state of the broad ligaments permits the organ to fall on the bladder whenever the woman stands. Great fatigue, violent shocks, the repeated effects of a painful labour, vomiting, or constipation may be mentioned as causes of anteflexion.

The history of the following case of anteflexion after marriage, I will narrate from the patient's statement:—

E. S., aged about twenty years, was married in October, 1866. She had enjoyed good health previously. In December of the same year, being slightly ill, she consulted a doctor who thought she might be pregnant. At Christmas she received news which caused most violent mental emotion, and a few days later, monthly sickness came on with severe pain and vomiting; the discharge was excessive. Had no advice at this time. She was ill almost every three weeks after this date, and suffered terribly at each period from pains in the womb, nausea, and cold shiverings; was confined to bed each time for three or four days, and suffered continually from headache. About May, 1867, she again received medical advice, and was told that there was a false membrane forming in the womb, and that the great weakness was the result of pain and loss of blood. She was ordered tonic treatment, and medicine to check the excessive discharge at the monthly periods. She got gradually worse, and was unable to walk even a few hundred yards without suffering from headache, feebleness of the limbs, bearing-down pains in the womb, and the most distressing weakness, so that she feared her reason would fail.

In July, 1868, she consulted Dr. ——, who said the system was quite undone; that there was falling of the womb, with a degree of inflammation at the monthly periods. Under tonic treatment the general health improved, but the painful symptoms in the womb increased.

In June, 1869, she again consulted Dr. ——, who thought her general health somewhat improved, and, as he considered the womb was slightly distorted, he gave her a small instrument to support it with.

In August of the same year, whilst bathing, she received a severe shock by throwing herself from a height into shallow water, and striking violently on the rocky bottom. This accident merely aggravated her symptoms.

In October, 1869, she came to me for advice, and I found her suffering from anteflexion.

In March, 1870, I operated with the most favourable results, all pain completely disappearing.

Such is the lady's statement of her own case.

On February 23rd, 1870, I saw her suffering from profound prostration, consequent upon uterine colic, arising during menstruction. She had no sooner begun to recover the strength lost during the previous menstrual period, than another supervened with all its suffering and exhaustion, leaving her in a worse condition than before. Examination confirmed the opinion I had given in October, 1869. The case was one of well marked anteflexion; and it was with great difficulty that the uterine sound was passed, even after bending it to the proper angle. acute was the flexion, that I hardly think the sound would have passed if I had not tilted up the fundus uteri. The uterus was mobile, and the case was not complicated by any morbid condition. Having therefore got my patient into a suitable condition so far as the bodily functions were concerned, and as soon as the state of the general health would permit, I determined to operate. On March 1st, 1870, having administered chloroform, with the assistance of my friend Dr. Johnstone, and after again assuring ourselves of the nature of the lesion, and that there was no complications arising from ulcerations of the vagina or cervix, or from any inflammatory or morbid condition of the canal of the cervix, I replaced the uterus first with the sound; and, while Dr. J. pressed deeply over the pubes with one hand and with the other held the speculum, I dragged the cervix a little downwards and forwards by means of a volsella fixed in its anterior lip, and performed Marion Sims' posterior section of the cervix by means of Simpson's hysterotome, and completed it with the bent knife. The considerable hæmorrhage which followed was easily controlled by the perchloride of iron and glycerine. She did well until the third

day, when I ventured to separate the edges of the section with the sound; this was followed by profuse hæmorrhage and metritis of a subacute character, which yielded to large doses of opium. fomentations, and poultices. It was not until March 24th that I ventured again to examine the section, when I found it had been so thoroughly done that very little union had taken place, and that little I undid. The anteflexion had been completely cured. By way of comment on the above, I would specially point out the danger of metritis and peritonitis, as a consequence of separating the edges of the section on the third day; for more than once have I seen alarming symptoms follow such manipulations. On this account I am content to wait until the fifth or sixth day, and even then I only use the finger, and defer passing the sound until a later period. Let me also direct attention to the operation itself, as I do not think it has received that trial in this country which it deserves. Its performance is simple enough; the whole object in view is to rectify the mal-position and to make the bent canal a straight one, and so obviate obstruction to the menstrual flow, at the same time favouring conception. For an explanation of the mechanism of the reduction of anteflexion by posterior section of the cervix, I must refer the reader to the last edition of Marion Sims' work, and to Thomas "On the Diseases of Women."

In the case I have just narrated there were no marked symptoms of disturbance of the functions of the bladder or rectum; but such does not always obtain. It is also well known that pressure upon the fundus of the vesical organ is better tolerated than upon the neck; and hence, in anteversions of the uterus, vesical symptoms are not the rule. But when, along with ante-version of the organ, there is hypertrophy of the body or cervix, and especially of the cervix, with retro-version of that part,—the lower segment of the uterus pressing the rectum backwards into the hollow of the sacrum,—constipation, and sometimes grave symptoms follow. Many years ago I had a patient so afflicted.

In May, 1864, I was summoned to visit Mrs. G., who had been married for several years, but had had no children. I found her in a state of collapse from intense colic of the bowels,—for it was

not her menstrual period, - persistent vomiting, obstinate consti pation, and slight tympanitis. Fomentations, turpentine stupes and subcutaneous injections of morphia gave considerable relief but the symptoms of obstructed bowel persisted, and increased until stercoraceous vomiting set in. Rectal injections, in the hands of a nurse, having failed to act upon the bowels, I examined the rectum and discovered this remarkable condition. abutted upon a tumour which seemed to block up the rectum like a ball valve, the posterior part of the tumour pressing closely upor the sacral wall. On passing another finger per vaginam, thi so-called valve, or rectal plug, was dicovered to be an enlarged conical cervix uteri which pressed backwards and downwards while an enlarged posterior vaginal cul-de-sac partially invaginate it into the rectum. The body of the uterus was anteverted upon the bladder. I drew forward the retroverted cervix uteri passed a long tube well above the seat of obstruction, and admi nistered a large enema, which afforded immediate relief. patient was twice under my care subsequently, for similar attacks and the same manœuvre gave relief. Some time previous t consulting me, she had been under the care of a medical mar on account of a similar attack, and on this occasion she wa bled and blistered; but whether this doctor discovered the exac state of matters is not known, as he died shortly afterwards.

I proposed relieving this patient by operative measures, but thi treatment she would not permit.

These two cases are not uncommon forms of anteversion an anteflexion occurring in married females who have never ha children; but, according to the statistics of authors, anteversio and anteflexion are frequently met with in those who have ha children. In the instances above cited there were no vesice symptoms whatever; neither was there any inflammatory lesion of the uterus or neighbouring organs. The following case differ from the last in this respect, that the condition of the rectur was not the consequence of the uterine displacement, but the cause of it.

In February, 1870, I was consulted by Mrs. B., aged 40, o account of disease of upwards of two years duration, about

which she had applied to several medical men, but without any benefit. When she came under my care her symptoms were a down-bearing feeling whenever she assumed the erect posture, frequent vesical tenesmus, great pain in the region of the anus which prevented her sitting or walking, unless with great agony, and the most intense anguish during and after defecation lasting sometimes for hours. Life had thus become a burden to her. and was spent between the two varieties of a change from the bed to the couch, and vice versa. Digital examination detected an ulcer, occupying the left and posterior part of the anus; and, on placing the finger of the other hand over the ischio-rectal fossa towards the coccyx, an indurated and painful thickening of the tissues was felt. Under chloroform, I found at the upper margin of the ulcer a small opening, the orifice of a blind internal fistula, through which I passed a bent probe, which led down to the induration above mentioned. I accordingly cut down upon the probe, and brought it out; after which I completed the operation for fistula in ano in the usual way. The same incision divided the base of the ulcer, which was nearly one inch in length and half an inch in width. During the operation, in which I was assisted by Dr. Johnstone, I found the cervix uteri pressing down upon the anterior wall of the rectum; and this was confirmed by a vaginal examination. The uterus was engorged and anteverted; and the cervix, enlarged and ulcerated, bleeding on the slightest touch, was retroverted and prolapsed. The depth of the uterine cavity was three-and-a-half inches. The rectal disease having been cured, the appropriate treatment for the uterine condition was followed by rapid amelioration; and the patient is now in perfect health, although she still wears, occasionally, when taking extra exercise, or when subject to extra exertion, one of Coxeter's pessaries.

The next case which I shall pass on to consider had a different causation, and one which has a direct bearing upon the use of the obstetric binder—I mean anteversion following labour. After parturition, the uterus is in the most favourable condition for being displaced, because of its increased weight, and the relaxed condition of the ligaments and vagina. A light binder may then so

press the intestines upon the uterus, as either to antevert or retrovert it; and the more I consider this subject, the more am I inclined to think that the obstetric binder has a very great deal to do with uterine displacements in child-bearing women, and that its indiscriminate use must sooner or later become a question of doubtful practice, to be settled upon its merits and demerits.

In November, 1869, I attended Mrs. H. in her eleventh confine-The labour progressed and terminated favourably, with this curious exception, that, as the placenta was being expelled, I detected it was not all there. I was, however, on the lookout for some abnormality; for, in all her previous labours. she had severe and prolonged post partum hæmorrhage, which generally came on one, two, or three weeks after labour. passing my hand along the shred of membranes, I discovered a cotyledon of the placenta firmly attached to the uterus. I detached it; and, on examining the placenta, I then found it perfect. During the week following her confinement the patient had the usual lochial discharge, but as it was offensive. Condy's fluid was freely used. On the eighth day, after the action of an aperient, she was seized with bearing-down and great pain, when she passed a mass, which a medical man, who was called in in my absence, stated to be a piece of retained placenta. prescribed a hæmostatic for the hæmorrhage, and two hours later I found my patient still bleeding and suffering from faintness. jactitation, rapid pulse, flushed countenance, and great excite-The uterus was deep in the pelvis, completely anteverted, with the os uteri directed against the promontory of the sacrum, and the vagina, as a consequence, closed against all possible exit of uterine clots. I corrected the displacement and emptied the organ of a large mass of fibrous clots, exactly similar to the vaginal mass pronounced by another practitioner to have been a piece of the after-birth.

Before considering the next division of my subject I shall narrate another case of anteversion, with elongation of the cervic uteri, which at first, on digital examination, presented the condition of retroflexion, from the existence of a tumour in the posterior cul-de-sac. In December, 1870, Mrs. D., who had been

married six years but was never pregnant, consulted me for leucorrhœa, of three years duration, which had resisted all local and constitutional treatment. Digital examination detected elongation of the cervix, and what felt like the fundus uteri in the usual site of well marked retroflexion; but there was no history of obstructed menstruation or pain, and the uterine sound was passed without difficulty in the usual position. The uterus was moveable and above the normal size, but this was accounted for by engorgement and granular erosion of the cervix. The tumour in the posterior cul-de-sac was moveable and painful on pressure, as determined both by vaginal and rectal digital examination, and was probably an ovary. It had not given rise to any symptoms, the patient not knowing of its existence; and she only complained of a sickening, painful sensation when it was pressed. I put her under treatment for the lesion of the cervix; but as she went to sea with her husband, I lost sight of her until February, 1871, when she again presented herself in my consulting-room. tumour in the posterior cul-de-sac had disappeared; the leucorrhea, favoured by an indolent sort of life on board ship in warm latitudes, had become intolerable; the bladder had begun to sympathise, as shown by occasional dysuria; menstruation was now attended with pain; and the uterus measured three-and-a-half inches, and was anteverted; while the elongated and diseased cervix was retroverted, and so pressed upon the rectum as to partially account for the habitual constipation which existed. After suitable preparatory treatment, on February 15th, my colleague. Dr. Baker, administered chloroform; and on exposing the cervix uteri, with Marion Sims' duck-bill speculum, the following morbid conditions presented themselves. At the vaginal reflexion of the mucous membrane, a red inflammatory appearance was found; and this became more and more intensified towards the os tincæ, increasing into granular erosion, while around the os were seen distinct excavated ulcerations having a honeycomb appearance. A white gelatinous mucus was flowing from the cervical canal. I first performed hysterotomy with Simpson's hysterotome, and then grasped the cervix with the polypus volsella, and dragged it down so as to enable me to put the curved scissors around it

sufficiently deep to excise from before backwards fully threequarters of an inch. The cervix was cut through with difficulty. as its tissue was as hard and tough as if it had been fibro-cartilaginous. The perchloride of iron and glycerine controlled all hæmorrhage, while opium and rest, with judicious nutriment, and attention to cleanliness by means of the vaginal douche, &c., completed the recovery. On March 11th, I found the cervix nearly healed, and the patient's health rapidly improving. Shortly after, this patient left Liverpool for her home in Jersey, where she put herself under the care of Mr. Marett, who, in a letter dated June 12th, 1871, writes to me, "that the incision made has healed perfectly; her health has much improved; catamenia recur with regularity and without pain; the interval quite free from any discharge, except slightly after fatigue." The progress of the lesions in this case demonstrated clearly the different steps in the formation of anteversion; though, in all probability, as the cervix became more and more elongated, the anteversion would have given way to so called procidentia. We have here, therefore, confirmation of the views held by Dr. Henry Bennet. melting down the hypertrophy with potassa fusa, or some other powerful caustic repeatedly applied, might have succeeded in gaining a cure; but the method adopted went straight to the object in view, and had the double advantage of saving time, and giving a certain result. The other interesting feature in this instance, namely, its similarity to retroflexion, shows the diagnostic value of the uterine sound.

Leaving this case of anteversion and simulated retroflexion, I now pass on to the next division of my subject, namely, retroversion and retroflexion of the unimpregnated uterus. Both these lesions are degrees of the same displacement. Marion Sims gives a table of three hundred and forty-three cases of malposition of the uterus, of which one hundred and seventy-nine were retroversions, and one hundred and sixty-four anteversions. He also states, that while one-third of all sterile women have anteversion from some cause or other, another third suffer from retroversion; anteversions prevailing in natural sterility, and retroversions in acquired sterility, or in those who have previously borne children. I have

already entered, as far as the length of this paper will admit, upon the pathological conditions which cause retroversion, many of which are complicated, theoretical, and uncertain of diagnosis; but the causation of the following remarkable case was simply mechanical, unattended with any inflammatory symptoms whatever, and cured by purely mechanical means. It has, therefore, an important bearing upon the mechanical and inflammatory theories of the schools of Simpson and Bennet.

In May, 1869, A. R., aged 17, a healthy-looking girl, came under my care, and in June (my late partner, Dr. Bruce, having confirmed the diagnosis) she was put under treatment. In narrating the history of her ailment the patient stated that she had been quite well until about six years ago (at eleven years of age), when she sustained a sudden and intense shock by the explosion of the Lotty Sleigh; she was under treatment for a considerable time, without any benefit, at general and special Institutions.

In June, 1869 (when she came under my care), having convinced myself that the uterus was retroverted, and the cervix uteri pressing forwards upon the neck of the bladder, while this viscus was empty, contracted, and almost atrophied, I introduced, with some difficulty (on account of the narrowness of the vagina), a stem and ball pessary. This was kept in for a month, and at the end of that time the patient was able to retain a considerable quantity of urine. I then withdrew the stem and ball pessary, and introduced and adjusted Simpson's pessary for retroversion; but before doing so I added a zinc and copper washer slid over the stem and separated from the ball by a gutta-percha cushion, in order to give the instrument a galvanic as well as a mechanical action, thus hastening the development of the organ, and inducing menstruation. She wore the pessary about three months, and menstruated twice during that time. I next withdrew the instrument, on account of the vulvar irritation it seemed to have produced; and a month later I found the uterus in its proper position, and the bladder able to perform its function, except when the patient overslept herself at night. The bladder could as yet only hold a certain quantity of urine, and after that it began to run over.

On February 7th, 1871, she came to my consulting room, and reported herself quite well, and able to follow her employment. She is in excellent health, and the menstrual functions are regularly performed.

This case requires no comment. It was rare of its kind, for it is seldom that retroversion takes place so early as the age of eleven. Yet that such an accident does happen was well known to Duges, Madame Boivin, Colombat, Scanzoni, and others long ago. It is not a displacement likely to be often met with at such an early age, and I was therefore not a little surprised to meet with another instance in a girl about thirteen years old. In this case, retroversion was combined with lateroflexion, and therefore, strictly speaking, this should be called a case of retro-latero-flexion. history of this girl's illness is long and extraordinary, but I will not detail it; suffice it to say, that in December, 1869, when in Edinburgh, she vomited blood. Every month this discharge, which was looked upon by her medical attendants as vicarious, returned. In the middle of March, 1870, she began to discharge blood from the mouth, nose and ears, and this continued for five weeks, and so debilitated her as to endanger life. As soon as she was able to travel, she was brought home to Liverpool, and on June 10th, 1870, I was consulted. I prescribed tonics, aperients, exercise without fatigue, and, during the hæmorrhagic attacks, perfect rest, and ice internally. Towards the end of the month, violent uterine colic set in, attended with an intolerable dragging sensation in the loins, and pain extending down the right thigh, causing her to limp when walking. The history of this weakness in the right leg was, that, having missed her foot, she fell down a stair in March; and she has had pain, and limped ever since. fall was followed by the alarming attack in March, which determined her parents to bring her home. About the 20th July. though her health was excellent, she had a terrible attack not of vicarious bleeding, but of intense uterine colic, intermittent in its nature, and lasting upwards of an hour; attended by coldness and lividity of the extremities, syncope, and los of consciousness for upwards of an hour, with loss of sight for two hours after consciousness returned. This dangerous

attack determined me on making a local examination of the vagina, and if necessary of the uterus. Having administered chloroform, with one finger per rectum, and the other hand over the region of the uterus, after a careful and searching examination, I ascertained that the organ did not occupy its normal position. The hymen was dilatable, so that at first the little finger passed without any effort, and then the index finger. Digital examination, and the passage of the uterine sound, clearly showed that the uterus was displaced, backwards and to the right side, towards and perhaps a little in front of the right sacro-iliac synchondrosis. I replaced the womb, and turned it as far to the left as it had been to the right, and kept my patient lying on her left side for a week. Since then she has had no uterine colic, and the pain in the right leg and limping in walking, immediately disappeared, and have not since returned. This patient, however, has had several attacks of vicarious bleeding, and a very alarming one last month.*

This case requires no elucidation; but, considered in connection with the preceding, it will be seen how apt a sudden shock, or succussion of the abdominal muscles, is to displace the uterus into such a position that it is not able to recover itself. The result of treatment in these cases proves that a sudden mechanical displacement may be corrected by mechanical means only.

My next is a typical instance of retroflexion, and narrated because it affords another example of the results of the use of Simpson's pessary. Although the use of that instrument has been latterly decried and objected to, there are cases where no other instrument offers the most remote prospect of relief. I cannot but endorse the sentiment expressed by Malgaigne in the discussion at the Parisian Academy of Medicine, that "a treatment which Amussat, Velpeau, Simpson, Huguier, and Valleix had tried, cannot, should not, be considered as repugnant to common sense."

In April, 1869, Mrs. D., aged 26, and married, consulted me on account of painful menstruation, bearing-down pain, and

^{*} She has menstruated since that date, and now enjoys robust health.

irritation of the bladder, rendering her life most miserable. She had received advice from others without benefit, no one having thought it necessary to examine the condition of the pelvic organs. The symptoms above mentioned had existed in great intensity during the last two years, that being the period of her married life: but she had occasionally suffered during the past six years. She cannot, however, give any history of the first cause of the ailments. Uterine examination revealed complete retroflexion of the organ. The sound had to be curved almost into a semicircle before it would enter the cavity, and reposition was only accomplished after considerable difficulty, the patient being placed on her elbows and knees. As there was no inflammation of the cervix, and the body of the uterus was mobile in all directions, I introduced Simpson's pessary, which the patient wore with great relief to her distressing symptoms, until the beginning of August, when I removed it. Her general health had by this time improved greatly, and she expressed gratitude for the comfort she now enjoyed. After this she went to the country, and I did not see her for two years. On April 6th, 1871, she again came to my consulting room, with a return of her old symptoms, but in a minor degree. She stated that on going to the country she remained well for upwards of three months, but on resuming marital life she found that her old troubles began gradually to return. This leads one to suspect some disproportion between the genital organs of the husband and wife, as pointed out by Scanzoni and Henry Bennet as a frequent cause of uterine displacement. At present this lady has just recovered from granular erosion of the cervix and its canal. The retroflexion is not so well marked as previously—the fundus uteri being now higher in the Douglas sac. I therefore replaced the uterus and introduced one of Simpson's stem and ball pessaries, which I retained in position by moulding the flexible ring pessary into the proper shape. The pubic and vaginal stem portion of Simpson's pessary for retroversion can thus be done without; a matter of great comfort and convenience. Retroversion, arising suddenly from an accident, may as suddenly disappear. In a case of this kind which I once attended I was about to replace the womb

by means of the sound, but before I did so menstruation came on, and all the distressing symptoms disappeared, and an examination after shewed that the womb had replaced itself. this instance, the diagnosis was confirmed by my late colleague. Dr. Bruce. Having thus clearly shown that retroversion may arise solely from mechanical causes and can be cured by mechanical means, may even rectify itself spontaneously. I shall now narrate a case which is clearly confirmatory of the correctness of the views promulgated by Dr. Henry Bennet and others. The case was seen by Dr. Davidson, who recognized the displacement. Mrs. J., aged 30, had been married three years, and had been complaining during that period of pain on walking, affecting the region of the uterus, the back and hips, and rendering sexual congress painful and undesirable. This had existed from the date of marriage, and she had not been pregnant. Vaginal examination revealed retroversion and right lateroversion, or retro-laterodextro-version; also an ulcerated condition of the cervical uterine canal, which bled on the least touch. This state did not, however, extend to the lips of the cervix, nor to the vagina. The uterus was of normal size and moveable. The treatment consisted of topical applications of acid nitrate of mercury, carbolic acid, &c., to the canal of the cervix and the uterine cavity, followed by emollient, soothing, and ultimately astringent injections, the patient living the while absque marito. She was under treatment for about six weeks, at the end of which time she reported herself quite well, with no uterine symptom whatever, no menstrual pain, no pain on coitus, and with the uterus itself healthy and in the normal position.

The lesion in this instance,—the origo mali, upon which the uterine displacement and the whole train of morbid symptoms depended,—was subacute metritis of the lower segment and cervix of the uterus, which having been cured, the consequences disappeared. But retroversion may also take place gradually from the formation of morbid growths in the uterine wall, without their giving any indication of their presence for many long years. In 1864 I was called to a case of this nature. The patient was fifty years of age, past the climacteric period, and, with the exception

of rheumatic attacks occasionally, she had, throughout life, enjoyed excellent health. She was suffering from retention of urine when I first saw her. The bladder was enormously distended, so I proceeded at once to pass the catheter; but after entering the urethra a little way the instrument stopped, and could not be inserted farther. I then passed the finger into the vagina, when it abutted at once upon a hard rounded mass, which further examination demonstrated to be a fibroid tumour in the posterior uterine wall; the uterus was retroverted and the cervix was pushed against the urethra. The pelvic cavity was filled. I pushed up the mass, and passed the catheter. By teaching the patient to do the same when she could not empty the bladder I saved her and myself a great deal of farther trouble. She told me afterwards that pushing up the womb always enabled her to pass water freely, without the use of the catheter.

Such cases are not unfrequent; for, in January last, I was called to see a precisely similar case, and under similar circumstances. Both these cases were suitable for enucleation; but I hardly considered myself justified in proposing this measure until symptoms became more urgent. Whenever, however, that period arrives, I shall, without hesitation, cut down upon the morbid growths and remove them, guided by my recent experience in a case of a large fibroid growth, which half filled the pelvic cavity and obstructed labour at full term, and which I enucleated before delivery with forceps, with a satisfactory issue.

The next and final division of my subject is prolapsus uteri and elevatio uteri; but, before proceeding to consider these affections, let me remark that, in connection with anteversion, retroversion, and lateroversion, there is another condition of the womb which may be accompanied by any one of these malpositions, the womb falling to whatever side the patient may incline to, and giving rise to most distressing symptoms; I mean subinvolution of the uterus. In such cases there is involution of the thickness of the uterine wall, but little or no diminution of the size of the cavity. I have only met two such instances. The first of these patients came to consult my late partner, Dr. Bruce. Broken in health and in spirits, this woman, the cavity of whose uterus measured eight-end-

a-half inches, had not the courage to persevere with the treatment I recommended; and the knowledge of the nature of her ailment seemed completely to overwhelm her, so that she returned home without deriving any benefit whatever. In her case, the symptoms were very different from those in the next one I met with. Twelve months previously I attended this patient in a primiparous confinement, which was very laborious, and completed with difficulty, as she is a small woman, and the child was large. I applied the obstetric binder most carefully, kept her in bed a week, and she seemed to make a good recovery; but in about twelve months later I was called to her, and found her in a state of intense hysterical excitement, as she had lost the power of walking. She had, in short, reflex paraplegia, from subinvolution of the uterus. The depth of the organ was nearly seven inches; and, on testing its mobility. I found that the uterus could be moved in all directions in the abdominal cavity, but it could not be felt through the abdominal wall, nor was there any abdominal enlargement. Vaginal injections, abdominal frictions with iodine, tonics with iron and ergot, and rest, resulted in complete cure, and she has now remained well for upwards of twelve months. Whether the lesion of the uterus per se, or its pressure upon other organs, gave rise to the paraplegia I am at a loss to determine.

Elevatio uteri, or morbid ascent of the womb, is almost invariably a consequence of fibroid tumours, ovarian dropsy, or some other morbid condition: but sometimes the womb is found elevated to an unusual height, as a natural conformation, or as the result of the atrophy of old age. I have seen one well-marked instance of elevation from a peculiar arrangement of fibroids; one occupying each iliac fossa and pelvic brim, and a pedunculated fibroid, extra-mural, attached to the fundus uteri. I could not properly reach the cervix so as to guide the passage of the uterine Fortunately these cases rarely require treatment, as sound. nothing can be done for them. In the opposite form of displacement, or prolapsus, we can do more; for it is one of the greatest evils that a woman can dread, and hardly any other displacement has had more ingenuity expended on it. The subject is a very wide one, and I will only glance cursorily at a few examples of it.

I have already stated that, after delivery, prolapsus is very apt to occur. A case of that nature occurred in my practice in January. It resulted from the lady having imprudently lifted a heavy girl into a chair. The womb came down suddenly, and was suspended between the thighs; but an intelligent nurse at once put the patient on a sofa, replaced the organ, and sent for me. The womb was in situ, and rest in bed, with astringent lotions, for a fortnight, prevented a recurrence of the accident.

Dr. Henry Bennet has pointed out that prolapsus, although most frequently occurring in women who have had large families, also frequently arises from chronic inflammatory engorgement of the cervix and lower segment of the uterus, with all its attendant symptoms of leucorrhea and increased weight and size of the lower parts of the organ. Such cases are not uncommon, but I shall only relate the last one which came under my notice. Mrs. L., æt. 34, who had been four years married, but was never pregnant, consulted me on April 6, 1871, for the following symptoms, from which she had suffered for three years. complained of pain in the back and limbs, of down-bearing after exertion, such as walking, with continuous leucorrhea and severe menstrual pain. Two years ago, she consulted Dr. Bruce for the down-bearing, and he detected rectocele as the cause. exists, and is produced by the lowered and enlarged cervix uteri. The sound passed for 31 inches into the womb. The vaginal mucous membrane is congested and tender, and the os tince is swollen, glistening, red, and covered with granular erosions, while the canal of the cervix bleeds when touched. The treatment consisted of tonics, the application of nitrate of silver and nitrate of mercury, and of soothing, emollient, and astringent injections to the parts. This was followed with success, so that, by the 12th June, all inflammatory uterine symptoms were gone, but the menstrual pain still existed. On examining the os uteri carefully, I found it so contracted that I could not pass a No. 2 bougie. This condition, without doubt, resulted from the caustic applications to an elongated, hard, tapering cervix uteri. bulk of the organ was now much less, and the uterus had resumed its normal position in the pelvis, while the vagine had

so improved in tone that no rectocele existed. On the following day I performed hysterotomy, whilst the patient was under chloroform. The hysterotome did its work with difficulty, so hard and cartilaginous was the elongated cervix. There was little homorrhage and the incisions healed favourably. On July 26th, she called to tell me she had menstruated—the first time for three years—entirely free from pain; and all uterine symptoms have now disappeared.

This case requires little remark, for, the inflammatory conditions described by Bennet having been removed, and the small tortuous canal of the cervix laid open, the uterus resumed its normal position, and performs its functions without giving pain.

The next case is one of a type more frequently met with, and I shall allude to it chiefly because it was one of the first instances of incipient procidentia that I successfully cured by injections of a strong solution of the perchloride of iron.

Mrs. G., aged 42, came under my care in the early part of 1870. She is the mother of eight children, and her labours have been natural, with the exception of three, where the children were large and the shoulders were extracted with difficulty. She had menstruated regularly, but had occasional menorrhagia, also uterine pain, pain in the back and limbs, and inability to walk, but without much of the bearing-down feeling, and without dysuria. On examination, I found granular erosion of the os tincæ and a truly ulcerated condition of the canal of the cervix. The engorged uterus had gravitated low in the pelvis, causing cystocele and rectocele, the vagina and the uterine ligaments being in an atonic and relaxed condition. The cervix was retroverted, and the fundus uteri lay over the bladder somewhat more than usual. The application of different caustics to the os tincæ, to the canal of the cervix and cavity of the uterus, relieved the engorgement and erosions sufficiently to enable the patient to tolerate a Coxeter's pessary occasionally when out walking. The use of it, with various astringent injections, gave her comparative comfort for a time, but the symptoms threatened recurrence whenever they were omitted.

I next prescribed a lotion, containing one part of the strong liq.

fer. perchlorid. to eight parts of water, and increased the strength of the injection cautiously to one in four. This had such a powerful constringent action on the vagina, that it was impossible to introduce the finger twenty-four hours after its use. She could now walk with comfort, without any sense of down-bearing, and consequently the pessary was laid aside. After the first application of the lotion in the strength last stated, a complete cast of the cervix and vagina came away. The injection was repeated, and such was the constringent action of the remedy on the relaxed vagina, that not only did the cystocele and rectocele rapidly disappear, and the uterus resume its normal position in the pelvis, but I believe it would have been possible by this means to close the vagina, if its application were too frequently and improperly This injection sometimes causes external vulvar smarting, but rarely any internal pain. This patient is now completely well, and has not found it necessary to use the lotion for many months.

I have had several other cases of a similar character and cured by similar means, but I shall only refer shortly to one instance of complete procidentia, in which the uterus protruded in the third degree, and in which there was no elongation of the neck from hypertrophy. The organ was engorged, but there was no erosion or ulcerative disease of the cervix. The application of the acid. nitrat. hydrarg. for a few times to the cavity of the uterus, was followed by the use of the liq. ferri perchlorid. fort. (one part to four of water) in the form of vaginal injection. This was repeated from time to time for three months, and the relaxed condition of the vagina rapidly diminished. But as this patient had to stand and walk much she was greatly improved by an appropriate adaptation of the flexible ring pessary. In the liq. ferri perchlorid. fort., we have an important addition to our vaginal applications; but I should hardly venture to speak definitely as to its seemingly specific value in certain forms of procidentia, until I have had further experience. For the important question arises: Do cases of long-standing procidentia ever recover spontaneously, as it were, or by the use of pessaries, meant merely to give mechanical support, and not applied with a curative intention? Two-and-a-half years ago I was summoned to a case of syncope, from agonising pain in the hypogastrium, caused by complete procidentia. After the subsidence of the urgent symptoms I ordered a Gariel pessary. She got one of the largest size, and wore it and others for eighteen months. About six months ago, I was called to see this patient when suffering from bronchitis, and on enquiring if she still had the procidentia, she said no. She had been obliged to get a smaller and smaller instrument, and now she was able to do without one. As she was much strained by the cough, I recommended her to reintroduce the pessary and to wear it for a time.

My remarks hitherto have referred to cases in which no injury has been done to the uterine supports, to the vagina, or to the perinæum. When these parts have been injured or destroyed, elytrorraphy, as practised by Marion Sims, will generally succeed. Nearly two years ago I cured a cystocele and prolapsus uteri in the third degree, by the combined operations of elytrorraphy and perinæoraphy, after the manner described by Marion Sims in his works. In this case, the sphincters of both vagina and anus were torn through completely, so that all control over the bowel was lost.

TABLE FOR THE EXAMINATION OF URINE.

By DR. J. CAMPBELL BROWN,

LECTURER ON CHEMISTRY AND TOXICOLOGY AT THE LIVERPOOL ROYAL INFIRMARY SCHOOL OF MEDICINE.

I. Observe the colour and appearance of the Urine, whether it is clear or turbid, and whether it contains much mucus.

A high colour may be due to BILE, BLOOD or PURINE; a pale colour may indicate excess of WATER, and frequently also Glucose.

II. Observe the reaction to red and blue litmus papers.

Normal urine is slightly acid; if the reaction is alkaline, and the red colour of the paper is restored on drying it, the alkalinity is probably due to ammonium carbonate from the decomposition of urea; confirm by observing whether effervescence occurs on the addition of an acid to the urine.

- III. Observe the specific gravity.
 - (a.) If the specific gravity is above 1025, test for glucose by (1.) Potash solution and heat; GLUCOSE gives a dark solution. (2.) Add potash and filter, if necessary, then add copper tartrate and more potash until a blue solution is obtained; on heating to the boiling point GLUCOSE :reduces a red or orange precipitate of Cu. O.*
 - (b.) If the specific gravity is high and sugar is no present, add to a portion of the clear urine in a deep watch-glass about one-half its volume of cold concentrate nitric acid; a deposit of hexagonal plates of urea nitrate

[•] In cases of diabetes it is generally desirable to estimate the total amount of sugar passed in twenty-four hour s, before treatment, and again after some weeks' treatment of the patient. For the methods of estimating quantitatively the constituents of urine, refer to "Neubauer and Vogel, Angulysis of Urine; Translated by Sydenham Society."

indicates excess of UREA. (Probably excess of phosphates and other salts will be found accompanying excess of urea).

- (c.) If the specific gravity is below 1012, this may be due to great dilution of the secretion with WATER, which will be further indicated by the large quantity passed in twenty-four hours; but it is more generally due to disease of the secreting organs, and is accompanied by albumen, the urine being then frequently alkaline, but sometimes acid.
- IV. Heat a portion to the boiling point in a test tube, albumen may be at once coagulated; add nitric acid drop by drop; a flocculent precipitate indicates Albumen; confirm by adding to another portion of the urine acetic acid, filtering to remove mucus, if necessary, and then adding potassium ferrocyanide; a white precipitate indicates Albumen. The deposit from an albuminous urine should be examined microscopically for CASTS, PUS and BLOOD GLOBULES.

Boiling alone may first cause a precipitate of CALCIUM PHOSPHATE, which will be re-dissolved on the addition of nitric acid. If a turbid urine is rendered clear by boiling, the turbidity is due to urates.

- V. Add to a portion of the urine, ammonia in excess; the white precipitate consists of ALKALINE-EARTHY PHOSPHATES; filter and add ammonium chloride and magnesium sulphate; the white crystaline precipitate indicates the amount of phosphate which was originally present as ALKALINE PHOSPHATES.
- VI. To another portion add ammonia and filter; then add ammonium oxalate; the white precipitate contains the CALCIUM as oxalate.
- VII. To another portion add nitric acid; divide into two parts; to the first add barium chloride; the precipitate contains SULPHURIC ACID as barium sulphate. To the second add silver nitrate; the curdy precipitate contains the CHLORINE as silver chloride.
- VIII. A dark brown or blue colour may be due to Indican which is destroyed by nitric acid.

Any colour from that of Gregory's powder to an olive green tint may be due in part to bile.

- (1.) Pour a layer of the urine (concentrated, if necessary,) on to a white dish, and add concentrated nitricacid. A play of colours, green, blue, purple and red, indicates BILE PIGMENT.
- (2.) Boil a portion of the urine with acetic acid, and filter to remove albumen, then add a few crystals of cane sugar, and a few drops of concentrated sulphuric acid; a purple tint indicates the ACIDS OF BILE.
- A red colour may be due to blood; in this case heat will have destroyed the colour, and coagulated the albumen of blood. Examine
 - (1) by the microscope for BLOOD GLOBULES, and
 - (2) by the spectroscope for HAEMATINE.
- A high colour may also be due to purpurine. In this case it is unaltered by heat and by nitric acid. Boil a portion with hydrochloric acid. A dark red or purple colour indicates excess of PURPURINE, of which a small quantity is present in normal urine. Allow to stand for a day; the crystals which slowly form are unic acid, an excess of which frequently accompanies purpurine.

CASES OF POISONING RECENTLY TREATED AT THE LIVERPOOL ROYAL INFIRMARY.

By W. J. CLEAVER, M.B.,

Two Cases of Poisoning by Carbolic Acid.

CASE I. J. J., a policeman, aged 38, was admitted on February 27th, having swallowed by mistake two or three mouthfuls of crude black carbolic acid, such as is used for purifying sewers.

He arrived at the Infirmary three-quarters of an hour after the accident, and was then in a state of complete collapse, with profuse perspiration, cold extremities, contracted pupils, stertorous breathing, and an intermittent pulse.

Galvanism and friction were resorted to, with injections of brandy per rectum, but they failed to rouse the patient; the stomach pump was tried, and although about two pints of warm water were thrown into the stomach, nothing could be got out; the reason for this was explained at the post-mortem examination.

At 5 p.m., the patient died, six hours after the first occurrence, shock to the nervous system evidently being the cause of death, as he never recovered from the collapse.

A post-mortem examination was refused, but wishing to see the effect of the acid on the stomach, I made an angular incision one inch from the spine on the left side over the last rib, and, through that opening, extracted the stomach and five inches of the æsophgus. The stomach was nearly full of a fluid resembling gruel, but a little darker, with a strong odour of carbolic acid, in which were numerous pieces of mucous membrane, in fact, the lining membrane of the stomach was almost completely burned or peeled off, the small portion that remained adhering to the walls was arranged in a linear form, and could be detached with almost the slightest touch; the membrane did not present a charred and grey

appearance, as it does when acted on by other corrosive poisons, as sulphuric acid, but was white and bleached; the cosophagus presented the appearance of leather, tough and unyielding; and the canal was very constricted, the cardiac orifice was so narrowed that it would with difficulty admit a small sized pea, which plainly showed the reason of the failure of the stomach pump. I could have wished the post-mortem examination had been more extensive, so that the intestines, spleen, trachea and other organs might have been examined.

CASE II. G. B., aged 40, was admitted on March 21st, having attempted to commit suicide by swallowing about an ounce of crude black carbolic acid (the same kind as in the preceeding case) about two hours before admission.

He was perfectly sensible but could not speak, pulse quick, skin clammy. He seemed to suffer intense pain in the cesophagus and stomach, and kept constantly expectorating viscid saliva; having already vomited several times, he was made to swallow a cup of warm water, followed by two eggs well beaten up, after which he made signs to show me he felt much relieved; he was then put to bed, and eggs beaten up with milk were ordered to be taken as long as he could swallow them.

He vomited several times during the night, the vomited matter smelling strongly of carbolic acid. Patient seemed much better in the morning, though deglutition was still difficult and painful. An ounce of castor oil was ordered, the eggs and milk to be continued.

On the third day his bowels were freely opened, the odour of carbolic acid being plainly perceptible in the stool, which was otherwise natural. A diet of bread, milk and eggs was ordered.

On the sixth day deglutition seemed much improved, as also the pain.

On the fourteenth day he was discharged cured.

The first of these two cases undoubtedly tends to show that death, in the early stage of poisoning by strong carbolic acid, is due to nervous shock brought on by the powerful action of the acid on the mouth, esophagus and stomach, and I think it very probable that if instead of continuing on his beat for half an hour, the

patient had taken active measures to arrest the progress of the poison by emetics, and the administration of albumen, the case would have ended very differently.

In the latter case the man had vomited several times before admission, and as no symptoms of collapse had then taken place, I was enabled to administer warm water, eggs, and milk, so as to stop the further action of the poison, and in the morning a dose of castor oil was given, so as to clear out any of the poison from the bowels, as the albumen had then had sufficient time to neutralise the acid, and there could have been little danger of the poison being absorbed in its passage through the intestines.

Three cases of laudanum poisoning were admitted into the Infirmary, the first, a child aged five months, to whom laudanum had been given for the purpose of quieting it.

The second and third were in females of 17 and 20 years of age respectively, the poison having been taken for suicidal purposes.

Two cases of poisoning by acetate of lead.

One by petroleum.

One by laudanum and phosphorous paste.

One by sulphate of zinc.

One by turpentine.

One by iodine liniment.

Two by hydrochloric acid, a substance so rarely used as a poison that Orfila only mentions one case, and that not occurring under his own observation.

All the preceeding cases ended successfully under the ordinary treatment.

In conclusion, I may remark, that the late Act regarding the sale of poisons has had the effect of considerably lessening the number of poisoning cases admitted into the Infirmary, especially as regards laudanum, those that have occurred have been by substances hitherto rarely used as poisons.

NOTES OF CASES OF TETANUS.

By WILLIAM LITTLE, M.R.C.S. Eng., ASSOCIATE RING'S COLLEGE, LONDON; SENIOR HOUSE-SURGEON, SOUTHERN HOSPITAL.

Tetanus is one of the most difficult diseases to treat successfully that comes under the notice of the medical man, and therefore anything made public as regards its treatment, whether successful or not, is of the greatest use.

At this hospital, since its commencement, tetanus has been treated in almost every manner; and that which has answered best, in the opinion of the staff, is the mercurial treatment, carried to extreme salivation.

Since September, 1870, nine cases of Tetanus have occurred in this hospital; seven of which were of the traumatic variety, and two of the idiopathic. I propose giving notes of these cases.

Case I.—J. D., ætat 16, admitted into hospital on September 26th, under Dr. Nottingham, suffering from a severe compound fracture of the hand, extending into the wrist-joint, the soft parts being very much lacerated.

The hand was dressed with carbolic oil, and the boy went on very well until October 12th (seventeen days), when he complained of dysphagia, sore throat, pain in the back, stiffness in the jaws, more or less trismus, and other symptoms of tetanus. The wounds were looking at this time moderately healthy.

He was put on the mercurial treatment: one grain of calomel every two hours. Calomel to be sprinkled on the wounds, and ung. hydrarg. fort. to be well rubbed into the abdomen, the thighs, and the entire length of spine. In a few hours the tetanus was most severe. There was perfect trismus, opisthotonos, continued spasm, acute pain in the back and epigastrium, inability to wallow anything, well-marked risus sardonicus, and copious

sweating. Pulse 120; breathing rapid. About four hours from commencement of treatment, calomel was again sprinkled on the hand, and an enema of soap and assafætida was administered. As regards diet, he could only allow a little beef-tea and milk to trickle between his teeth. In about twenty-four hours (October 13th) the calomel began to affect him; he had suffered dreadful agony during the twenty-four hours, and it was not until he was quite salivated that we noticed any diminution of the spasms, or that he felt any relief; the salivation was complete about the evening of the 15th, seventy-two hours after first taking the calomel. The calomel was continued every second hour for about thirty-six hours, after that it was given every four hours; the ointment was rubbed in about as frequently, and calomel was sprinkled on the wound morning and evening. Chloral hydrate in 3ss doses was given at bedtime, and this certainly appeared to ease him, but only for a short time. During the three days that salivation was being effected, the tetanic symptoms did not vary much, but I think they were as severe as I have ever seen.

October 16th. Pulse 120. He can swallow a little, and can open his mouth about an inch; much less pain in the back and neck; he slept for two or three hours last night, after taking the chloral; a great quantity of saliva running from his mouth; gums much swollen and bleeding. The spasms were much milder since last evening, and at longer intervals. He was now ordered to discontinue taking the calomel, but to continue its application on the wound, as well as the inunction, twice a day.

October 17th. He can open his mouth more than half the natural width. Pulse 100; breathing much easier; can swallow liquids without any spasm coming on; has had only two spasmodic attacks since last evening. Salivation is profuse. He is to leave off the application of calomel and unguent hydrarg. fort.; the hand to be covered with simple dressing.

October 19th. The boy can now open his mouth tolerably well; still complains of stiffness of the nape of the neck and jaws; says he feels as if he had been bruised all over; this is probably from the severe and long-continued contraction of the muscles. Breathing easy; can swallow well, and takes a pint of beef-tea and

milk night and morning. Pulse 100. The hand is going on well; he has lost his thumb and one finger; the remaining injured portion is gradually granulating up. From this time he progressed favourably.

CASE II.-J. N., ætat 55, a labourer, was admitted into the hospital, under the care of Dr. Wollaston, in October, 1870, with a severe crushing and laceration of the soft parts of the whole forearm, and the lower half of the upper arm. The injured limb was dressed on the carbolic acid principle, and did remarkably well. A week after the accident he complained of sore throat, difficulty of swallowing, pain in the neck and jaws. Trismus. and all the usual symptoms of tetanus, began to develop themselves. He was ordered eight grains of calomel as a cathartic. A quarter of a grain of morphia was given hypodermically every four hours, until he became very drowsy, and could with the greatest difficulty be kept awake. In twenty-four hours the symptoms had become much milder; he could open his mouth much better; the stiffness had almost disappeared. He was now ordered the morphia, in the same doses and manner, three times a Under this treatment all unfavourable symptoms disapday. peared; and in a month the patient left the hospital.

CASE III.—T. W., ætat 17, was admitted into the hospital, under Dr. Nottingham, on March 17th, 1871, with a very severe lacerated wound of the foot, about five inches long, extending from the posterior part of the heel, along the outer ankle, cleanly dissecting the whole of the soft tissues from the under surface of the os calcis. The edges of the wound were retained in apposition by hare-lip pins, and dressed with carbolic acid. The greater part of the wound united by first intention. But on March 30th it did not look so well, and appeared as if it would re-open. The patient complained of severe pain in it, as well as in his neck, also of stiffness in the jaws, and slight sore throat. There being suspicion of tetanus, he was put on the mercurial treatment, and ordered to take calomel, gr. iss., every hour. The inunction of the ung. hydrarg. fort. in the thighs, neck and abdomen ewer

three hours. An enema of aloes and assafætida was administered directly, and lint saturated with liq. morph. mur. was placed on the wound as a dressing; his pulse at this time was 84; breathing rather quick.

March 31st.—He has perfect trismus, continued tonic spasm, with most violent exacerbations, complete dysphagia, very sore throat, and severe pain in the back and neck, and risus sardonicus. The pain in the foot was somewhat easier. With very slight alteration, these symptoms maintained their severity until April 2nd. The treatment was also continued.

April 2nd.—Salivation being complete, the calomel powders were omitted. The inunction was to be continued, and the wound was to be sprinkled over with calomel, instead of being dressed with the liq. morphiæ. His entire spine was blistered, and afterwards dressed with unguent. sabinæ. At this stage of the treatment the lad had much improved. He could open his mouth one-third of the normal extent; the dysphagia was less; the pain diminished; and the spasms milder, and coming on at longer intervals.

April 4th.—Pulse 90. He can open his mouth more than half the natural width, breathing easy, spasms very slight now, not more than three in the last twenty-four hours. Salivation is extreme, the mercurial inunction and calomel dressing to be omitted. He complains of sleeplessness, and was ordered fifteen grains of chloral, to be repeated at bedtime.

April 6th.—Can swallow much better, breathing easy. Can open his mouth pretty well now, but there is still stiffness of the jaw. Pulse 88, mouth very tender, complains of general soreness; slept for some hours after taking the chloral, which is ordered for every night at bedtime. There is hardly any general spasm left.

April 7th.—Except a little of the risus sardonicus (which remains more or less in all the cases of recovery I have seen), the lad has none of the tetanus left. From this period he rapidly recovered his strength, the wound went on well, and soon healed, and in about three weeks the only thing complained of was tenderness of the heel when walking. This soon went away, and he was discharged quite well.

Case IV.—E. L., ætat 61, a widow, was admitted into the Hospital, under Dr. Cameron, on January 25th, 1871, with idiopathic tetanus. The patient does not remember having received any injury, and there is no sign of any on the body. She has been living very badly for some time past, hardly ever tasting meat, having been much exposed to cold and wet, and very poorly clad. She first noticed the stiffness of the jaw on January 22nd, and then followed a little difficulty in swallowing.

The symptoms on admission were inability to open the mouth more than half-an-inch, extreme pain in head and face, dysphagia, much spasm coming on when attempting to swallow, or at the mere thought of it, and risus sardonicus. Only the muscles of the head and face were affected by the tetanic spasm. Patient is very feeble, has no appetite, and has a troublesome cough. Pulse 88; resp. 32. She was put under the mercurial treatment.

January 26th.—The jaw is more fixed, and the muscles of respiration are now included in the spasm. She cannot sleep, Pulse 96; resp. 32. The calomel, &c., is affecting the gums, therefore it, and the inunction, are to be omitted (ordered 3ss. of castor oil, bowels being much confined).

January 27th.—Opisthotonos commencing, pain in the back, cough more troublesome. Pulse 100; resp. 28. To have an enema terebinthinæ, and the following mixture: R Tinct. belladonnæ 3iss.; aquæ camphoræ 3viii.; m. 3i. 4tis horis, and 10 grains of Dover's powder at bedtime.

January 28th.—Dyspnœa and spasm are increasing, and there is more opisthotonos. Left leg is quite stiff. On account of the dysphagia, an enema, composed of whisky, egg, and milk, was ordered every four hours. Mustard cataplasms were applied to the soles of the feet, and to the calves of the legs. Pulse 124; resp. 34. The belladonna was increased to 3iii. in the 3viii., and mxx. of liq. opii. sed. was to be given at bedtime, instead of the Dover's powder.

January 30th.—Slight delirium, tetanic symptoms somewhat milder. The rectum no longer retains the nutrient enemata, but, fortunately, the power of swallowing has more or less returned. The mist. belladonne to be omitted, and the following ordered:

R sp. æther sulph 3iii.; aquæ camph. 3viii.; m. 3i. 2ndis horis; the spine to be blistered.

February 1.—Can open the mouth wider, swallow better, but very thirsty. This morning she has had rigors, followed by sweatings. She obtains sleep from the haust. opii. Two scruples of carbonate of ammonia were added to the mixture.

February 2nd.—Severe opisthotonos, more rigors. Patient very feeble. Pulse 100; resp. 40.

February 4.—Severe tetanic spasm, followed by acute febrile attack, came on last evening. There is laryngeal stridor, with hoarseness. Pulse 116; resp. 36. The last mixture was stopped, and two grains of camphor were given every two hours.

February 6th.—Respiration spasmodic. There is general bronchitis, which is much aggravated owing to the spasmodic contraction of the muscles of the chest. She can now swallow pretty well; the trismus is almost quite gone. Febrile attack during the night. Pulse 100; resp. 40.

February 8th.—To omit the camphor, and to have again the ammonia mixture. There is now no tetanic spasm, but she complains much of the cough.

February 10th.—Tr. camph. co. was added to the mixture.

February 12th.—Some amount of spasm has returned. She was ordered a mixture containing iron and ether.

February 18th.—She has steadily improved since last note; all the tetanus has gone; can now eat solid food. Quinine added to the mixture.

February 24th.—Not so well; breathing is getting hurried. The patient's strength is giving way, probably owing to the copious discharge from a large bedsore on the sacrum. There has been no recurrence of the tetanic spasm, and, although slight improvement continued after this for a short time, the patient grew weaker, and died on March 22nd.

At the post mortem examination, the brain and spinal cord were carefully examined, and no appreciable lesion could be found. The lungs were congested, the bronchial tubes contained some thick, greenish mucus. The other organs were healthy.

The probable cause of the tetanus in this case was exposure to

cold, and the want of proper nutrition. Whatever may have been the immediate effect of the remedies administered, it is difficult to say to which, if to any, we could ascribe the subsidence of the tetanic symptoms. As will be seen by the report, there was no improvement manifested on the appearance of the mercurial action, which was developed with more than usual rapidity.

From the belladonna, followed by camphor, benefit seemed to be derived. The power of deglutition returned during this time, and the general tetanic symptoms had nearly subsided, when, owing to the severity of the pulmonary complication, carbonate of ammonia was substituted for the camphor. After this her improvement progressed satisfactorily; she ate well, slept tolerably when not troubled with cough, and her condition was such as led us to hope for a favourable termination.

The change which subsequently occurred was principally ascribed to the depressing effect of the large bedsore, which had formed during the early part of her illness; this, in fact, seems to have been the immediate cause of the fatal result, to which the bronchitic complication, however, must have contributed.

Case V.—T. L., getat 30, was admitted on October 4th, under the care of Mr. Hamilton, suffering from a severe burn over the entire back and abdomen. The burn was dressed with carron oil, afterwards with ung. zinci. The patient went on well for seventeen days (October 21), when he complained of cold, pain in the neck, jaws, and epigastrium, hoarseness, and slight stiffness of the jaw. These symptoms were suggestive of tetanus coming on, and, without delay, he was ordered two grains of calomel every two hours, the denuded surface on the back to be sprinkled over with calomel, and the remaining surface of the burn to be dressed with an ointment composed of ung. hydrarg. fort. one part; ung. calaminæ four parts. The man was put on a pint of beef tea and milk night and morning, with soup for dinner.

October 22nd.—The symptoms are now very severe; opisthetonos, intense pain in the back and neck, and stiffness in the jaws, trismus complete, one continued tonic spasm, with violent exacerbations, dysphagia, copious perspiration, pulse and respiration

very frequent, risus sardonicus well marked. The treatment was continued, but the calomel was ordered to be taken every hour, and the mercurial ointment to be used in the form of inunction into the thighs, neck, and jaws every three hours, the burn to be sprinkled again with calomel. At this time he could hardly swallow anything, and, being very exhausted, he was ordered a brandy and beef-tea enema every three hours. On the evening of this day he was much worse; the calomel had only slightly affected his gums, though it had been given so frequently. The symptoms got more intense, and he expired on the morning of the 23rd, or forty-eight hours after the commencement of the disease, suffering all the time the most intense agony. He died in the middle of a severe convulsion. The post mortem examination showed great congestion of the brain, spinal cord, and membranes.

CASE VI.-D. D., ætat 29, a widow, was admitted under the care of Mr. Hamilton, on February 27th, 1871. She was then in an advanced stage of tetanus, which had commenced about thirtysix hours previously. Some three months before this she had bruised her right leg. Two ulcers had followed this, which had been dressed with "green ointment." For a week or so previous to the tetanus appearing, these ulcers had been very painful. They had now the appearance of irritable sores, with a thin She had, on admission, perfect trismus, ichorous discharge. severe tonic spasms, and a semi-asphyxiated appearance. piration very difficult, with a quick and very feeble pulse; great pain in the back, neck, and abdomen. I thought her in a moribund state when admitted. She was put to bed, and stimulants by mouth and rectum were administered. When some reaction had taken place, she was ordered calomel, gr. ij. every hour. Ung. hydrarg. fort. was rubbed into the neck, thighs, and abdomen every three hours. Brandy and beef-tea enemata were administered every two hours, as she had almost complete dysphagia. The tetanic symptoms increased in severity, and the blueness of the face got more apparent; she became gradually asphyxiated, and died about eight hours after her admission, and

about forty-five hours from the commencement of the tetanus. No post mortem examination was allowed in this case.

CASE VII.—A. P., ætat 32, married, was admitted into the hospital under Dr. Nottingham, on March 16th, 1871, with a compound fracture of the ankle-joint. She went on well for about five days. The wound had been dressed with carbolic oil from the first. On March 21st, she complained of sore-throat, pain in the back and neck. The ankle became very painful, and the wound looked inflamed and sloughy. Stiffness in the jaws, and partial trismus, soon developed themselves, with violent contractions of the muscular system. She was ordered calomel, gr. ij. every hour, and the inunction of the strong mercurial ointment every three hours.

March 22nd.—Complete trismus, tonic spasms, and great pain in the back, &c. In the evening of this day (about twenty-eight hours from commencement of the treatment) her gums were slightly tender, the trismus had abated a good deal, and she could swallow beef-tea and milk pretty well, and yet she was very weak. Pulse 110, feeble. A tablespoonful of brandy was ordered every two hours. To continue the mercurial treatment.

March 23rd.—She takes plenty of nourishment, but appears to be sinking. Though taking the calomel every hour or so up to this time, she does not appear to be suffering from the usual effects of mercury, or only in a slight degree. The symptoms in this case, though severe, were not nearly so acute as the other cases of traumatic tetanus. She did not recover from the great exhaustion she was under, and died on the evening of the 23rd, or about sixty-four hours from the beginning of the tetanus, all the symptoms of the disease being present, but not at all severe.

The post mortem revealed intense congestion of the brain, spinal cord, and the membranes of both. Fluid was present in the cerebral ventricles, but nothing else worthy of note.

CASE VIII.—G. P., setat 61, a seaman, was admitted under Dr. Nottingham, on May 19th, 1871, suffering from tetanus erectus, which variety of the disease was maintained during his entire illness. After carefully examining his entire body, as well as cross-examining the patient and his friends as to any injury received by him, we failed to find any, and therefore diagnosed it as a case of idiopathic tetanus. The erect form this case took was interesting. He could not sit down, and had to stand upright in the cab that brought him to the hospital.

Some three days or so before his admission, he noticed stiffness of the jaws, and slight dysphagia, with sore throat. These symptoms increased gradually, and on the 19th April, when admitted, were He had a most careworn and distressed appearance, and the whole muscular appearance was affected with severe spasm. He was sweating profusely, the perspiration having an acid There was almost complete trismus; great pain in the back and neck; also much thirst and inability to swallow. appeared thoroughly exhausted. Pulse 96; respiration 24; temperature 99 Fah. He was placed in bed, and ordered the following treatment: R calomel gr. ij.; pulv. opii. gr. ss.; ft. pil.; Inhalation of chloroform was administered, and relieved him immensely. The ung. hydrarg. fort. to be rubbed into the thighs and abdomen every three hours. The entire length of the spine was blistered; an enema of turpentine was adminis-Beef tea and milk was ordered to be given in small quantities, if possible.

April 20th.—The patient is weaker; did not sleep during the night; has not been able to swallow anything. During the night has had two brandy and beef-tea enemata. Spasm most acute, and with frequent exacerbations. He can open his mouth a little more; legs are drawn apart to the utmost. Pulse 120; respirations 24; temperature 100.3. Ordered to continue the treatment, and to have the nutrient enemata every three hours. In the evening, on account of the intense agony, fifteen grains of chloral hydrate were given, which seemed to relieve him for a short time. The chloral was repeated at midnight. At this time his pulse was 140; respirations 28; temp. 101.

April 21st.—He can open his mouth about one-third; spasms much milder, and not so frequent; has less pain; is getting weaker. Pulse 140; very feeble, and slightly intermittent; resp.

28; temp. 102.2. The mercury was now affecting him, and he was ordered to take it in the same doses every four hours, and to continue the mercurial inunction. The blistered spine to be dressed with ung. hydrarg. fort. Nutrient enemata to be continued. In the evening he began to wander; very little general spasm, but more trismus. Pulse 140; resp. 36; temp. 102. About midnight he died rather suddenly, thoroughly exhausted, and partly asphyxiated. A post mortem examination, made twelve hours after death (in this case the man was placed on his face from the first on the dead-house table), revealed fluid in the cerebral ventricles; intense congestion of the brain, spinal cord, and membranes. Most congestion about medulla oblongata; the remaining organs healthy, except being congested.

CASE IX.—T. C., ætat 42, a seaman, was admitted an inpatient, under Mr. Hamilton, on June 16th, 1871, with a badly crushed hand, having been run over by a railway truck. He was very drunk. The hard and soft structures of the entire right hand were completely smashed, except a small piece of the palm. Amputation at the wrist was advised directly, but he resisted most obstinately the advice of all; therefore the hand was put in as good position as possible, placed on a splint, and dressed with carbolic acid. The injury went on as well as could be expected until June 19th, when it looked very inflamed and sloughy. The next day (June 20) he agreed to have it taken off, which was done at the middle of the forearm; all the tissues anterior to this being much swollen, inflamed, and ædematous. At the time of the amputation there was a suspicion that tetanus had commenced, but no decided symptoms appeared until three days after (June 23), when he complained of sore throat, slight trismus, and great pain in the stump, which was rather spasmodically flexed. ordered four grains of calomel, with ten grains of Dover's powder. In the evening the powder was repeated, the trismus being now more evident. There was tonic spasm of the muscles, with copious sweating, and intense pain in the stump, which was dressed with carbolic acid. This dressing was left off and a lineed poultice applied, and he was ordered the following: Two grains of calomel every hour, and the inunction of the ung. hydrarg. fort. on the abdomen, thighs, and axillæ. Pulse 108, and feeble. He takes one pint of porter night and morning, and one pint of milk and beef tea two or three times a day. The difficulty in swallowing was very slight until the last day.

June 24th.—The stump is flexed to the utmost; severe opisthotonos; most acute pain in back and neck; complete trismus. Spasmodic exacerbations come on very frequently. The stump looks sloughy, and the arm is much swollen and inflamed. Pulse 120; resp. 28; temp. 99. Spine blistered, and dressed with ung. hydrarg. fort.

Evening 24th.—Can open his mouth a little better. Pulse 128; temp. 98'8°.

June 25th.—Forearm still firmly flexed; cannot be straightened; surface of stump is a little healthier; spasms less severe, and he says he feels better. Pulse 140; temp. 98.2. He cannot swallow so well. Treatment continued, and the jaws to be blistered. As he does not sleep, twenty grains of hydrate of chloral were administered.

Evening.—Spasms more severe; opisthotonos. Through the dysphagia being now present, beef-tea enemata were ordered every three hours; thirty grains of chloral were given, and some relief followed this. Pulse 140. Gums are very tender; saliva running from his mouth.

June 26th.—Can open his mouth one-fifth of an inch; much salivated; spasms are as frequent and severe. He is becoming rapidly exhausted. The mercurial treatment omitted, and chloral, in half drachm doses, ordered every four hours. He cannot swallow at all.

Evening.—He experiences great relief from the chloral, and can open his mouth wider after the chloral than before taking it. Pulse 180; resp. 50.

June 27th.—Is dying. Pulse 132; temp. 98.4. He expired in a convulsion at noon.

Post mortem made ten hours after death. The brain, spinal cord, the spinal membranes and medulla were more intensely congested than any I have ever seen.

All the cases recorded (excepting Case II.) were similar, inasmuch as they were of the most acute character; the injuries in each case were also of a very severe nature, and such as were most likely to cause tetanus. The fact of the cases being acute was certainly not favourable to a successful termination.

Only two of the patients were of a youthful age, and these recovered; the recorded cases of recovery from tetanus being greatly in favour of young patients. Tetanus has appeared very frequently at this hospital, and almost every remedy recommended has been tried; and has failed, I may almost say, in every instance. About three years ago, two lads recovered, who were treated mercurially; and after this, every succeeding case has been similarly treated, and though this treatment has not succeeded as well as we could wish, it has certainly answered better than anything else.

One great point is, to begin the treatment on the first suspicion of the disease, and obtain salivation as soon as possible. The patients who recovered were soon affected; those who died, withstood the action of the mercury for a long time, and, even at the last, were not properly under its influence. Whether tetanus has the power of rendering the system more or less capable of resisting mercurial action, is an interesting point; my opinion is, that it does possess some such power. Another fact is, that in this disease young people are sooner salivated than adults, though it is generally understood to be the contrary in other cases.

The fatal cases have all experienced relief when salivation has been effected; the trismus, dysphagia, and general spasm abating to a considerable degree; the cause of their death appearing to be exhaustion. Altogether, the result obtained encourages us to prosecute the mercurial treatment further, with careful clinical observation, for, unfortunately, the results of post mortem examinations help us hardly at all.

ON DIPHTHERIA. BY FREDERICK P. WEAVER, M.D.

The object of the following remarks is to call attention to a well-known fact, viz., the obscurity of the origin of certain cases of diphtheria. I allude to cases which are unquestionably instances of diphtheria. We frequently meet with "betwixt and between" cases, where, apparently as the result of a common cold, there is swelling of the tonsils, and on these organs, and especially in their cavities, are seen little points of white exudation, like mucus, or like bits of white of egg; but these points do not coalesce and spread, and do not remain more than a day or two. Such instances we do not call diphtheria.

In the true disease there is exudation in one or more places, on one or both tonsils, on the pillars of the fauces, or on the uvula, which exudation is thick, whitish, and adherent, and tends to spread more or less to the neighbouring parts, and there is at the same time more or less fever. Under this type of true diphtheria we find two classes of cases—the one originating in contagion, the other apparently not so.

The first class—or that originating in contagion—seems to have much affinity to scarlet fever. We can often trace the origin of the first of a group of cases to some similar case at a distance. Perhaps several in a family, and several families living near one another, are attacked. A patient removed to another house carries the disease with him, and other persons in the second house will suffer. Children seem most prone to the complaint. There is sometimes a rash, more or less resembling scarlet fever, and this is followed by desquamation. Sometimes the urine is albuminous; in fact, the course of the disease is so like scarlet fever as to suggest that it is a modification of, or something grafted on, that

disease. This connection between scarlet fever and diphtheria is insisted on by some distinguished physicians. The late Dr. Addison used to say "he did not understand diphtheria, it seemed a mule of scarlet fever." The disease, however, is a different one from scarlet fever. It occurs in those that have had that complaint; and the disease taken by a person exposed to the contagion of diphtheria, assumes the diphtheritic type more than the scarlatinous.

This disease is severe, and often fatal, primarily or secondarily. I find that out of eleven cases of which I have some notes, in children ten years old and younger, five died,—two from laryngeal symptoms, one from bronchitis, one from congestion of the brain, and one from purpura. Both grown-up persons and children visiting these cases may take the disease.

But, besides this first class of cases of true diphtheria, which seem decidedly contagious in origin and result, we meet with a second class, little (if at all) contagious. Daviot makes this distinction, and states that diphtheria is not contagious except when complicated with exanthems. It is to this second class of cases I more particularly wish to direct attention. We now and then meet with diphtheria in a sporadic or endemic form. We are quite unable to trace the case to any previous case; perhaps two, three, or more persons in a house are attacked with varying degrees of severity; by and bye the disease leaves and no one else takes it. This is not the history of a contagious fever; it more resembles that of some disease of local origin.

I join in the opinion of those who hold that these cases arise from defective sanitary arrangements, especially from drainage emanations. Such emanations may arise from a faulty water closet or cesspool, from a housemaid's sink pipe or bath-room pipe when untrapped, and stopped up either by their own contents or by frost, also from the near neighbourhood of a foul privy. I can hardly remember one of these cases in which some such defect was not found on enquiry, or, at all events, in which there was not a possibility of such defect.

Of sixteen cases furnished by my memoranda, I find in two there was a defective water-closet. In two other mild cases is

neighbouring cottages, there was offensive liquid from pigsties close to the back door. In three cases in one house (schoolmistress, usher, and servant), commencing within five days of one another, there was a most offensive cesspool outside the back-kitchen; the pipes were stopped, causing the offensive fluid to flow on to the floor. In two slight cases—a housemaid and little girl—there was a leaking water-closet pipe passing through the pantry, contaminating the soil of the floor, and very mal-odorous. In another case—a housemaid—there was a stopped-up untrapped sink pipe in the pantry. In the case of a child (severe, with nasal speech, regurgitation of fluids, and weakness of legs), there was a large peculiarly offensive privy in a yard adjoining the house, which privy, I have no doubt, was resorted to by the child for playing in. In five cases in one house, three young ladies and two servants were attacked nearly at the same time; one of the ladies (a severe and prolonged case) had nasal speech, regurgitation of fluids through the nostrils, and weakness of the limbs; another of them had a mild throat attack, but in her a blistered surface took on diphtheritic action, and was very long in healing. It was very difficult to assign a cause for this outbreak; a fair supposition was, that drainage emanations had got into the bath-room and bedrooms from an untrapped bath-pipe, the outlet pipes being stopped up by The persons attacked were those who had most communication with this part of the house, the other inmates escaping entirely.

It has seemed to me that of the persons attacked by this form of disease, those who were quickly removed from the influences of the supposed cause, or in whose cases the drainage defect was speedily put right, got well sooner than those in contrary circumstances. I do not find one case of this form of diphtheria communicated to persons simply visiting the persons attacked and not exposed to the assigned cause, viz., foul emanations.

When two, three, or more persons were attacked, they mostly showed symptoms of the complaint nearly at the same time, too nearly together to make it probable one had taken it from another. I find, too, that far the larger number of the patients (thirteen out of sixteen) were females, who, by household duties, are much more

within doors, and consequently more exposed to any "endomic" disease; and that, even of the females of a house, those were attacked who had most to do with the rooms containing the foul emanations.

There are not wanting plausible suggestions why foul emanations should produce such a disease as diphtheria. It seems probable that foul material in inspired air is more or less absorbed by the nasal mucous membranes, and possibly by that of the pharynx, that this should produce irritation of these parts, and excite the set of symptoms we call diphtheria. We find that the foul odonrs of the dissecting room are liable to affect the throat. I am informed by Mr. Colley, of Guy's, that one of the first symptoms shown in the hospital of suffering from overwork, in dressing wounds or dissecting, is a sore throat, which, from his own experience, he would say was due chiefly to the enlargement of the tonsils. case apparently of foul material in the air absorbed by the upper part of the respiratory mucous membrane, and producing local irritation, to be, doubtless, followed by more general symptoms if the inhalation be further persisted in.

The coryza attending hay-asthma is an instance of local irritation of the upper part of the air passages, derived from irritating matters in the air; and, in fact, the coryza in a common cold is from the local irritation produced in the same parts by irritating air, viz., air of an unsuitable temperature.

Again, the theory that diphtheria may be excited by breathing drainage air, is quite analogous to the theory that typhoid fever is excited by drinking drainage water. There is some resemblance between the structure of the tonsils and that of Peyer's glands; and the affection of the tonsils in the one case, bears some analogy to the affection of Peyer's glands in the other. On the whole, however, I do not assert that there is proof of a connection between diphtheria and foul emanations; but only a presumption of such connection, derived from practice and theory, requiring further observation to confirm or refute it.

This presumption is sufficient to make us watchful for sanitary defects when sporadic or endemic diphtheria occurs, and at once to get the patient out of the pernicious influence either by complete removal of the defect, or by removal of the patient. It is, further, a matter of great importance to observe whether this form of the disease is, in the true sense of the word, contagious; for instance, whether a patient who has acquired the complaint in one house, and is removed to another, can carry contagion with him to the inmates of the second house. I am much disposed to think he can not carry it.

With regard to treatment, there is little to add to the suggestions of Sir W. Jenner and others. I do not think strong local applications arrest the disease or do any good, and they may do harm. I prefer a moderate application of tincture of sesquichloride of iron, weak muriatic acid, or nitrate of silver, along with chlorate of potash used as a gargle, and swallowed, or a gargle of Condy's Fluid, and the internal administration of tincture of iron, with or without quinine. The throat should be steamed, cotton-wool, with belladonna liniment, applied externally, sufficient nourishing diet given, and pure air admitted, with the free use of disinfectants in the patient's room.

NOTES OF A CASE OF POPLITEAL ANEURISM TREATED BY COMPRESSION.

BY G. E. WALKER, F.R.C.S.
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On the 21st of December, 1869, I was called to see a middle aged gentleman, who stated that he had hurt his knee in getting out of a railway carriage some three or four hours before. I found the usual signs of a popliteal aneurism, about the size of a small egg. The mode of origin is worthy of notice. In descending from the carriage, he purposed placing his left heel on the step, but his attention being suddenly diverted, the heel slipped in front of the step and he was brought up by the toe catching the station platform, and sustaining the momentum produced by the fall of a man about fourteen stone weight. He thus unconsciously imitated the operation for producing rupture of the popliteal artery, which Richerand performed on the dead subject, namely, by violent and extreme extension of the knee.*

In forty-eight hours, in spite of the use of tourniquet, digital pressure and flexion, the ancurism had increased in size so as to bulge out considerably beyond the lateral and posterior boundaries of the ham, and to extend $2\frac{1}{2}$ inches above the adductor opening. The rapidity of the enlargement led me to believe that there had been rupture of the outer, as well as of the middle and inner costs of the artery, though if so the aperture must have been at first very small.

On the fourth day the aneurism and the treatment together had produced such distress as to induce me to request Mr. Stubbs to see the case with me, and to urge the propriety of ligaturing the superficial femoral. Mr. Stubbs' advice, however, was to continue the pressure. Up to this time we had endeavoured to keep up

[.] Hodgson's Treatise on the Diseases of the Arteries and Veins. p. 64.

continuous pressure day and night, but owing to the bad state of health of our patient, superadded to the ordinary difficulties of the process, we had been unable to prevent the increase in size before mentioned. There was also great cedema of the whole limb, and much engorgement of the vessels leading to the popliteal vein. Much of this was, doubtless, due to the compression of the femoral vein, involved necessarily in that of the artery. The walls of the sac had, however, attained some degree of strength, so that after a six hours' rest, rendered absolutely necessary by the distress of the patient, the aneurism had not further increased, and much of the swelling of the limb had disappeared. We could now apply pressure only very partially, and for some weeks this was the plan. At bedtime the leg was bent on the thigh as far as could be comfortably borne. He could never tolerate for more than a few minutes such an angle as would ensure stoppage of pulsation; still, we were able to lessen pulsation slightly on some occasions for several hours. In the morning he was moved to a low iron bed, which had a framework at each end about 2½ feet high. Between these a half-inch manilla rope was tightly stretched, for the double purpose of supporting, and by its elasticity enabling us easily to vary the power of, the weight employed. The weight was made up in this fashion: a disc of brass, 11 in diameter, had a stout pin 6 in. long screwed into its centre; leaden weights of various convenient shapes were threaded on this pin; to the bottom of the disc was glued an India-rubber hemispherical air pad, covered with wash leather, and a stout string connected the top of the pin to the rope, the object of the whole being to maintain closure of the artery with the minimum amount of pressure. The weight directed diagonally against the edge of the pubic ramus could be borne with comfort for about four hours, but in practice we found objections to its use which led to its discontinuance. The slightest lateral movement on the part of the patient would throw it off, and such was the delicacy of the balancing that under a minute increase of blood pressure, as in coughing or sneezing, the weight was lifted, and pulsation caused. In the afternoon the patient was changed to a sofa, and had on a Signorini tourniquet, or controlled the pulsation by flexion, or still better by crossing the affected limb over the

other and placing a tightly-rolled towel underneath the aneurism. This was the treatment carried out, with a few unimportant variations, for many weeks. A tourniquet, with elastic bands, though made by one of the best surgical mechanicians, proved utterly useless; the old horseshoe, with an air pad, answered very fairly.

It will be observed that we were trusting to the intermittent pressure treatment so much extolled by the Dublin writers; and although we did not cure the aneurism by it, we lessened its size so considerably that on the 27th of March, when, owing to an attack of acute rheumatism, we were compelled to refrain from all surgical treatment, the girth of the joint was only one inch more than that of the sound limb, the pulsating tumour being about 21 in. in diameter. For the next fortnight the rheumatism afforded us sufficient occupation, and no attempt was made to control the aneurism, as, indeed, none could have been tolerated. When we again began to attack it, we found some little increase in size, and having now lost all faith in the three sorts of treatment we had tried, namely, intermittent pressure, incomplete pressurethat is endeavouring to shut off almost, but not quite, the whole current of blood to the sac, which I had attempted by using the delicately-balanced weight—and, lastly, the let-alone treatment to which we had been driven by the rheumatism, I tried to induce my patient to submit to continuous pressure. Such, however, was his dread of the repetition of the torture which he endured in the first four days of his illness that, though endowed with exceptional powers of endurance, I could not persuade him to make the attempt until the 5th of May, when he consented.

For the first few days no alteration was made in the mode of applying pressure; it was merely made more continuous, but after that the delicately-balanced weight was laid aside, and a block tin weight of 14lbs., shaped like a rifle bullet, was substituted. It was kept in position by means of a rod screwed into its flat end and made to pass through a hole in the apex of an elliptical arch of steel springing from a hollow pad, on which the thigh rested. The hemispherical end was placed diagonally against the pubic rames:

^{*} Vide Dr. T. H. Watson, in Edin. Med. Journal, May, 1869.

it effectually controlled the artery, and had several pounds to spare for emergencies.

After sixteen days of this treatment I found the aneurism smaller, but no signs of its occlusion; it was soft, and there was a considerable space unfilled by clot. For reasons detailed below, I now, after procuring another weight, differing from the one already in use by being about some 21lbs. heavier, and having a more conical apex, so as to sink deeper into the soft parts, proposed to make pressure on one artery alone—the common femoral, alternating between the pubic ramus and just above the bifurcation We had even with improved appliances great difficulty in compressing the vessel; the groin was sore, the glands were enlarged, and there was great pain down the course of the artery. Changes in the weights had to be made frequently; they were rendered more tolerable through being cooled by a freezing mixture, but it required all the untiring energy and patience of Mr. F. Young, who assisted me throughout the case, to keep up pressure at all, and in spite of every possible care, the horse-shoe tourniquet, in order to give a rest from the weights, had to be fixed on the superficial femoral several times—a course which, I believe, involved actual retrogression.

On the night of the 23rd, whilst being changed from a hard bed to a soft one, the patient extended his limb violently, throwing out of gear the tourniquet, which had been temporarily adjusted to permit the removal, and thereby caused the aneurism to pulsate fully as much as it had done three weeks before. All our labour seemed, therefore, to have gone for nothing. Next morning showed no change, and at noon, being sick with disappointment, our patient wished to be left to die in peace. To allow him a little time to recover, I removed weights and everything, and laid the limb in a comfortable position, with a cushion under the aneurism and a sandbag over the knee to limit the pulsation. He had then some food and wine, and, without being made aware of it, for he had a great objection to the drug, a grain of morphia. He fell asleep at once, and in half-an-hour the weight was replaced on the groin; in two hours he awoke much refreshed. The heavier weight was placed on the lower spot, and another grain of morphia adminis-

With the exception of a very few minutes, during which time he was in a sleep, almost comatose in character, I sat by him from one p.m. to eight p.m. with my fingers and thumb embracing the aneurism, so that I was perfectly certain no blood had passed beneath the weights, which were changed with the greatest care. Towards five o'clock I had the satisfaction of feeling the previously flaccid sac gradually fill out and harden, and at eight, when I left, matters appeared so promising that I ventured to prophesy, could pressure be kept up for another seven hours, the cure would be complete. At nine another dose of morphia-half a grain-was given, and again the patient slept.* Towards midnight the nurse in changing the weights, thought the pulsation had stopped, and soon afterwards, on Mr. Young coming on watch, he established the fact conclusively. As matter of precaution, the pressure was kept up during the night; the patient, now that his six months' anxiety was relieved, bearing the physical discomfort with comparative ease.

The considerations which led me to alter the method of pressure The Hunterian operation, as a rule, causes consolidation of the aneurism in a few hours; if then we could make compression act in the same way as ligation, we might expect similar good results. I therefore followed up the steps likely to take place after the application of a ligature to the superficial femoral, as being the artery in which I had an immediate interest. reasoning thus, the blood would pass in increased volume down the profunda and through its anastomoses with the superior articular arteries and the muscular branches of the popliteal, with the inferior articular, and with the anastomotica magna. By means of some of these vessels, according to the position of the aneurism. the blood would reach the diseased part of the vessel either from above or below, but, whatever the direction, the current would be at first a mere trickle, drop by drop, and as the coagulum already in the cavity is rough, there would be present the most favourable conditions for the sealing up of the vessel, namely, a current not

^{*} The weights were changed according to the patient's feelings; he could bear the ligher weight on the groin for some two hours, and the heavier below the groin rather less than one.

strong enough to make its way through the aneurism, and, opposed to such current, a rough surface highly provocative of coagulation.

Now to make compression act as ligation, it seemed that one had only to make it continuous. But as I had been doing this as well as possible for more than a fortnight without success, I felt there must be a condition unfulfilled of which I was yet unaware. As I had reasoned out the effect of the ligation, so I did of the compression method which I had used. Granting that my pressure for the time being was perfect, this would be the result. After, say four' hours (an extreme) closure of the artery at the groin, I should expect the blood about to seek a new channel by means of the anastomoses of the gluteal and circumflex iliac arteries above, with the various branches of the profunda below, and therefore, to reach the aneurism through the profunda—its ordinary current being reversed—and the superficial femoral. But before this new channel could be made available, -for it takes some time to make a collateral circulation, as I will show further on,—the pressure would be shifted from the groin to the mid-thigh, where the superficial femoral would be compressed, and the onus of forming a fresh channel transferred from the capillaries of the branches of the internal iliac, and the ascending offsets of the profunda, to the descending branches of the last-named vessel and its anastomoses, with the anastomotica magna and the muscular and articular branches of the popliteal. Now, supposing the change from one artery to another to be made too quickly to allow of the production of an efficient collateral channel for either artery, I was driven to the conclusion—always supposing the pressure was complete that it was possible to starve an aneurism, and therefore to increase its cavity. For I believe a process of absorption, similar to that which takes place after the consolidation of an aneurismal sac, is constantly going on during what may be styled the life of an aneurism. The clot is a foreign body, which nature is always engaged in removing. When, however, the blood has free access to the sac, the deposition of new material takes place with greater rapidity than the removal of the old, and, therefore, the aneurism increases in size.

This explained what had puzzled me before, namely, the station-

ary condition of the aneurism during the months of intermittent pressure, and the fact that, after a fortnight's continuous pressure, though the aneurism was smaller it was softer, and a very short time of free access to it of the blood sufficed to render pulsation as vigorous as it was weeks before.

As I could not keep the The next deduction was obvious. weight on one spot long enough to produce the desired effect, I must, in changing it, so choose my second site as to keep up the formation of the one collateral circulation which I had begun. I therefore used pressure only on that small portion of vessel bounded above by the inner margin of the pubic ramus, and below by the origin of the profunda.* Treatment according in intention with this reasoning was begun effectively three days before the final act. I believe some of this time was wasted, firstly, because many times the weight was raised to see the condition of the aneurism, for it was impossible at once to convert patient and assistants to the necessity of obedience to the requirements of the theory; and secondly, to the unfortunate accident by which two days' very hard labour was almost completely spoiled. latter, I was responsible, as it was done whilst I was removing him from one bed into another with the well-intentioned idea of giving him a good night's sleep. Unhappily, I caused him so much pain that he extended the limb violently, and started the pulsation in all its old vigour. Doubtless by this time the new circulation was almost finished, for the filling and hardening of the sac began next day, very soon after pressure was again efficiently used.

Such then are the considerations which led me to adopt the treatment by pressure on one artery. I wish now to notice some conditions which influence the duration of different cases. The chief of these are the condition of the blood, whether favourable or otherwise to the deposition of clot, the degree of elasticity of the arteries, and the facility with which nutritive change can be accomplished.

As illustrations of the first, I may mention purpura and scury, in which diseases one would scarcely look for the cure of aneurism,

I believe this was left quite clear, for the heavy weight was borne best just below
 Poupart's ligament, and not at the apex of Scarpa's space, where therefore it was not find.

and in that mysterious condition of system, the subjects of which get the suggestive title of "bleeders," we should be probably disappointed. But there are most likely other systemic phases less defined than these three, which, whilst they do not prevent entirely, make the process of coagulation very slow.

As a rule, I should think the second and third conditions of more practical interest, for, supposing that the blood, as mostly happens, is in a tolerably favourable state for clotting, the cure of the aneurism will depend on the relative facility for the formation of a collateral circulation, and this, of course depends on these two conditions. Probably in very young people, with perfectly healthy vessels,—and therefore unlikely subjects for aneurism,—the elasticity and contractility are such that, by the dilating power of the longitudinal muscular fibres, and the peristaltic action of the circular, blood can be at once sent through the ordinary anastomoses when a large trunk is stopped.

But the very fact of the presence of an aneurism may be taken as proof that arterial degeneration exists to some extent, and, therefore, one would not expect normal elasticity or contractility. Nutrition also, by which alone permanent change can be made in the calibre of the anastomosing vessels, must be in such cases slow; and herein we have an explanation of the variable periods required for the cure of aneurism in different individuals subjected to the same treatment.

Hodgson says he has tied the main artery of a limb, and then injected the parts beneath through the upper part of the vessel. He does not state the age of the body whence he took his limb, nor whether the pressure which he used was the same as that of the living heart; and then, again, the vessel may be more dilatable after death than during life.* Further on he states, that in an old man who died four days after ligation of the external iliac for inguinal aneurism, after injecting the artery above the ligature, he found the wax had passed by numerous anastomoses from the branches of the internal iliac into those of the profunda, such anastomoses being so minute that only a few were capable of being traced. "The injection had not sufficiently succeeded to fill the

femoral artery," so that it would appear in this case four days were not sufficient for the production of an effective collateral circulation. He cites also another instance, in which Sir Astley Cooper* was unable to inject through the crural the parts below, several weeks after the Hunterian operation for popliteal aneurism.

In a case of embolism of the popliteal artery, occurring in a man aged 84, which I brought before the Liverpool Medical Society last winter, there was no perceptible enlargement of the collateral vessels when I saw him twenty hours after. I believe this very long period was due to the closure of the popliteal not being complete in the first instance, for the man described the pain in the calf as coming on gradually, and even at this time I could detect a slight pulsation in the dorsal artery of the foot. Forty-eight hours after this, when I next saw him, the collateral vessels on the front and sides of the knee were pulsating vigorously enough to be perceived with the eye as well as the finger.

I think it right to call attention to this because a recent advocate of the "rapid method,"—indeed, I may say its originator, Dr. Murray,—has laid down, in what appears to be meant for a general proposition, that "aneurism can be cured by coagulation of blood;"† as I understand it, coagulation "en masse." Certainly many aneurisms have been cured in a few, indeed a very few hours, and by coagulation of blood, though how that coagulation be effected is still a moot point; but I do not believe that all aneurisms can be cured in a few hours.

Dr. Murray speaks under the inspiration of his well known and admirable cure of an abdominal aneurism, in a strong man, 26 years old, who therefore, possessing rapid nutritive change and good coagulative power, was a likely subject for quick cure. From the position of the aneurism, a little above the origin of the iliacs, only one site of pressure was possible. At first it was used for two hours only, and then without visible improvement; three days after it was kept up for five hours, during the last one of which pulsation had diminished greatly, and when the instrument was removed finally, it was found to be so feeble that a speedy cossition

was looked for, and not in vain, for it stopped altogether a few hours afterwards. As far as I can judge, Dr. Murray, and others after him, believe this to have resulted from a coagulation, en masse, of the blood which was in the aneurism at the moment of application of the tourniquet. I would respectfully submit that the cure was accomplished in the ordinary manner, by a collateral circulation and the gradual formation of a clot, and not by mere stagnation. It is evident, from Dr. Murray's Plate III.,* that the aneurism would receive from the superior mesenteric artery, through its inosculations with the inferior mesenteric, which sprung from the aorta almost in the centre of the sac, a sufficient amount of blood to form a plug. Indeed, once the pressure was complete, there would be little waiting for the formation of a coagulation circulation; there was one in existence already.

Then, how could blood stagnate in the aneurism as long as the common iliacs were open? It is impossible that blood should remain in an artery, unless it were made a close cavity by the stoppage of all apertures of exit. Even if the iliacs were stopped, though Dr. Murray denies the necessity of distal pressure where the aorta is concerned, would not the lumbar and spermatic arteries be big enough to take off in a second or two the few ounces of blood which the vessel contained below the site of proximal pressure?

Would not rather this take place? When the tourniquet was applied, the artery would collapse and approximate the sides of the aneurism lined with rough laminæ; as soon as a drop or two of blood found its way by the new channel into the sac, and in presence of these rough laminæ, it would be coagulated before it could escape, and so, by the time the communication between the superior and inferior mesenterics became large enough to supply anything like a steady full stream, the cavity would be almost filled, and the cure almost perfect.

It must be remembered that there is, over and above the elasticity of arteries impaired perhaps in the wall of an aneurism, a force tending to empty them exercised á fronte, namely, the peristaltic action of the smaller arteries, as shewn by MM.

Legros and Onimus. Then, again, if an aneurism were cured by stagnation, it would remain the same size during the curative process. But in the last few hours of cure an aneurism enlarges. I felt, in the case above related, the sac "fill out and harden," and I think this is universal.

It has been suggested to employ a tourniquet on the distal side of the disease. Of this, Dr. Murray, in his "Concluding Remarks," says: "the value of his (Dr. O'Farrall's) suggestion is great, if the circulation be not completely stopped in all vessels which by anastomosis throw blood into the aneurism, but this seems to me impossible where the aorta itself is fully commanded."

Is it not because of the very free anastomoses which exist between the arteries of the abdomen that the cure of aneurisms of the aorta and its immediate branches can be accomplished so quickly? And if so, might not this be turned to account in treating aneurisms occurring at a greater distance from the aorta than the groin, as in Mr. Lawson's case quoted by Dr. Murray?! The collateral circulation would be speedily formed, but the aneurism would receive only a small quantity of blood, since the abdominal organs, supplied by vessels below the site of pressure and the opposite limb, would demand the larger share of that furnished by the new channel. This plan might be worth trial in a young, thin subject, in whom there was no objection to the giving of chloroform.

The distal tourniquet may be dispensed with where the coagulative power is normal, but where it is feeble, and especially in those cases in which pulsation recurs, it will be of considerable use. In such a case as the one related by Mr. Brookes, of Cheltenham, in the Lancet, vol. ii. for 1856, p. 192, it is difficult to see how cure could have been produced by pressure without two tourniquets. In it, an inguinal aneurism, pulsation returned on the day after ligation of the external iliac, and continued for twenty-two days. An effective collateral circulation must have been perfected here in about twenty-four hours; probably it had been partially made before the application of the ligature, for the aneurism was situate just under Poupart's ligament, which would exercise considerable

constrictive force against its dilatation, and therefore obstruction to the passage of blood through its cavity.

It will be seen that I wish to establish the following propositions. I fear I may not have done so conclusively, nevertheless I would commend them to the consideration of every one who has aneurism to treat, as I believe they are true.

Firstly. "That cure by pressure takes place exactly,—quoad what occurs in the sac,—as in cure by ligature."

Secondly. "That it is, therefore, by the formation of a collateral channel round the site of pressure, as round the site of ligature."

Thirdly. "That it is not by stagnation of blood already existing in the sac, but by gradual increment of clot."

Fourthly. "That since in most cases it is impossible to keep up pressure on one spot sufficiently long to ensure consolidation, it is advisable to use the one artery method, by which cure is produced as quickly, and with far less distress to the patient."

I hope then to have contributed somewhat to the rendering of the pressure treatment, a definite treatment, as contrasted with what I believe to be the "chance" treatment, as advocated by Bellingham. At the same time, I cannot but think, in opposition to Dr. Murray, that the majority of aneurisms will take a longer time for cure than the few hours he speaks of so confidently.

For the more easy carrying out of the pressure treatment, I would submit the following recommendations, which refer specially to the lower limb, but which may be applied elsewhere.

The edge of the pubic ramus is the place where the crural artery is most easily compressed. In the case above related, as well as in others, I have found, by catching the artery with the finger diagonally against the edge of the pubis, it could be closed with less pain to the patient, and whilst the surgeon could keep up pressure in this fashion for considerable time, he could only do so perpendicularly to the bone for two or three minutes. The difference could be well estimated with the weight; it required for perpendicular pressure some two or three pounds more than for diagonal.

The groin ought to be well shaven and powdered very thickly; prepared fuller's earth is the best powder.

But of far more importance is the cooling of the weight. For another case, I would have the upper part of it deeply hollowed for the reception of a frigorific mixture. It was only by keeping the weights icy cold that we were able in the case above related to use them at all in the final act, for crops of pustules were appearing with most annoying rapidity, and the glands were enlarged and painful.

Finally, as there is under the use of complete pressure a reasonable prospect of quick cure, I would enjoin the free exhibition of opium or cannabis indica to dull sensibility, not necessarily to the extent of insensibility, but to prevent worry and fidgeting. Mental anxiety intensifies pain wonderfully. The patient whose case is the text of these remarks, after his mind was set at rest by the knowledge that his disease was cured, bore without a murmur for hours on a sore skin the weight which twelve hours previously he could scarce tolerate twenty minutes, and this too without opium.

ON THE USE OF THE PNEUMATIC ASPIRATOR.

BY C. E. LYSTER, M.D.

SURGEON TO THE TOXTETH PARK WORKHOUSE INFIRMARY.

It is always useful, on the introduction of any new instrumen tor appliance into practice, for those who have had some experience, however limited, in its use, to record the results. The narration of actual cases invariably encourages others to a trial of the means employed, or warns them from its use. I have been induced by this consideration to place before the readers of this journal a few brief notes of cases treated by means of the pneumatic aspirator.

In the Lancet for May 28th, 1870, the aspirator is figured and briefly described, and its invention is there attributed to Dr. George Dieulafoy, of Paris. In a subsequent number, however, that of June 11th, the origination is claimed by Dr. Protheroe Smith, of London, and, from the description and plate there given, it will be seen that the two instruments are undoubtedly identical in principle, though, I think, for practical purposes the one manufactured by Messrs. Weiss, and ascribed to Dieulafoy, will be found The latter consists essentially of a graduated most efficient. exhausting syringe, having two taps, with accurately fitting stopcocks adapted to one end; to the distal extremities of the taps, exploring needles and canulæ of various sizes can be attached and removed at pleasure. The lower extremity of the piston rod is notched in such a manner as to permit of the piston, when drawn up, being fixed in its position by a half-turn. The mode of using the apparatus, which is sufficiently simple, is as follows: The stopcocks connected with the taps are first turned, which effectually prevents the entrance of air into the interior of the glass cylinder, the piston is then gradually drawn out to its full length, and retained in its position by a half-turn, by this means an almost

perfect vacuum is obtained; the syringe is then laid aside, and the operator, having selected an exploring needle, or trochar and canula, as the case may be, carefully introduces it into the tissues to the necessary depth, the syringe is then attached, and the stopcock turned, when, if fluid be present, it immediately rushes into the cylinder. Should no fluid appear, the needle can be pushed deeper, or in a different direction, without detaching the aspirator; should the cylinder fill with fluid, it can be emptied either by removing it from the needle or canula altogether, or by opening the second tap, closing the first, and depressing the piston. When quite emptied, both taps can be closed, another aspiration made, and so on, as often as desired. In thus using the instrument, it is well to pay attention to one or two practical points. 1st. I now invariably induce local anæsthesia at the point of puncture by means of Richardson's apparatus. The pain is thus reduced to a minimum, and in some of my cases the patients have not complained of pain 2nd. The needle or trochar should be well oiled before use, and some care is necessary for its proper introduction. should not be pushed forward at once, but gradually insinuated into the tissues with a rotatory motion. 3rd. The state of the taps, stopcocks, piston, and needles should be carefully attended to, and every precaution taken to ensure their being in perfect The last may appear an unnecessary caution, but I am led to make it by a disappointment I myself experienced from inattertion to the state of the exploring needle.

The following cases, illustrating the employment of the aspirator, are abbreviated from notes carefully taken for me by Drs. McGregor and Oxley, resident medical officers at the Toxteth Park Workhouse Infirmary.

John D., set. 16, admitted to hospital March 15th, 1871, sufering from a severe attack of confluent smallpox, from which he was slowly recovering, when, on the 18th of April, he complained acute pain at the left side, accompanied with much dyspnæs. The patient was so exhausted by the previous disease that it was found impossible to employ the usual remedies; and, beyond careful attention to diet, &c., the case was entirely left to nature.

April 28th.—Physical examination showed dullness over

left chest, in front and behind; considerable displacement of the heart towards the right, breath sounds and vocal fremitus absent. It was at once decided to evacuate the fluid, and for that purpose I introduced No. 2 exploring needle in the usual position, and by means of the aspirator, drew off about 12oz. of pus.

April 29th.—Dyspnœa greatly relieved; able to lie on the right side; left lung more resonant on percussion; feeble respiration audible.

May 1st-5th.-Takes food better; gradually recovering.

May 6th.—Dulness and other signs of fluid still present, though in a much less marked degree. No. 3 trochar introduced, and about 6oz. of pus, slightly mixed with blood, withdrawn.

May 9th.—Complained of pain in the back; on examination discovered a superficial abscess.

May 10th.—Abscess opened and a quantity of feetid pus evacuated, to the great relief of the patient.

May 15th.—Abscess discharging freely; able to take any amount of nourishment.

May 28th.—Abscess healed. On examination of the left chest the area of resonance was found greatly increased, though still some dulness remained at the base of the lung.

June 1st.—Continued improvement; discharged convalescent.

Case II.—Mary G., æt. 21, married, and nursing a child five months old, was admitted May 10th, 1871, states that three weeks before admission her husband struck her in the right chest, but as soon as the immediate effect of the blow passed off she experienced little inconvenience, and continued at work for a week afterwards, when she was suddenly attacked with severe pain and breathlessness, and was quite unable to leave her bed. She remained in this condition without any medical assistance for a fortnight, and was then sent to hospital.

On examination all the usual signs of pleuritic effusion were found to be present in an aggravated degree. The dulness anteriorly and posteriorly was complete; the decubitus was entirely on the affected side, and the dyspnœa very urgent.

May 11th.—No. 2 exploring needle introduced, and with so

much ease that the patient was scarcely aware of the proceeding. The aspirator was then affixed, and in the course of an hour 7502. of yellowish-green serum evacuated. Ordered a large blister to be applied to the side, and diuretic pills and mixture.

May 13th.—Better; dulness still present at the back; respiratory murmur distinctly heard, breathing easy, and can lie without difficulty on the affected side.

May 14th.—Somewhat feverish; slight mercurial fœtor perceptible in the breath. Pills to be discontinued, and chlorate of potash added to former mixture. From this date the notes of the case show uninterrupted progress towards recovery. She was discharged perfectly well on the 29th of May, the physical signs indicating the complete recovery of the lung, and the absence of fluid in the cavity of the pleura.

Case III.—John H., æt. 41. This patient laboured under advanced phthisis of long standing, and had undergone the usual routine of treatment at various institutions. When admitted to hospital May 30th, 1871, he was suffering from a severe attack of phthisical pleurisy, and an examination showed the existence of a large collection of fluid in the right chest, complicated with disease of the left lung, and great general debility. The second sized trochar and canula were passed into the pleural cavity, and 50 case of light-greenish coloured odourless pus withdrawn. The relief of the pain and dyspnæa was marked and immediate.

June 10.—Examination evidenced further accumulation of fluid. No. 1 trochar was introduced, and the enormous quantity of 1750s of pus removed. The patient remained during the whole time occupied by the operation in the sitting posture, and complained of little or no inconvenience. From this date there was a slow, but marked improvement. All the symptoms were ameliorated, and he so far recovered as to be able to leave the hospital on the 26th June, and undertake a railway journey into Wales.

CASE IV.—Sarah R., set. 44, seven months pregnant, admitted July 21st. Dulness over left chest, back and front; vocal fremits absent, heart somewhat displaced, decubitus entirely on affected

side, severe dyspnæa. No. 2 trochar used, and 30oz. of greenish pus withdrawn, the last few ounces slightly tinged with blood.

July 26th.—Canula again introduced, and about 10oz of pus drawn off. The patient gradually improved, and insisted on taking her discharge August 16th, though advised to remain longer, as there was still evidence of the presence of fluid. I have made several efforts to trace further the history of this interesting case, but have been unable to ascertain any particulars.

CASE V.-Jane M. passed through a severe attack of typhus fever under my care. During convalescence she suffered from a very common sequela, namely, abscess at the angle of the lower jaw, extending in front of the ear, and causing intense pain, inability to move the jaw, and deafness. I have always found abscess in this position most difficult of management, the depth of the matter from the surface, the strong covering of fascia, the proximity of the large vessels, and other important structures, rendering its evacuation by ordinary incision somewhat In the present instance I at once plunged the trochar into the tissues, and having penetrated about one inch and a half from the surface, connected the aspirator, when pus immediately rose into the receiver. I succeeded in withdrawing about 3oz. The relief was marvellous; two days afterwards, at the patient's own request, I again used the instrument, and drew off 2oz. more of pus, after which the progress towards recovery was rapid and uninterrupted.

Case VI.—Mary P., æt. 36; after recovery from a sharp attack of smallpox, this patient complained of severe pain in the iliac region, and after some days fluctuation was distinctly felt, indicating the formation of a large diffused iliac abscess. The aspirator was used, and 10oz. of fluid withdrawn. Four days afterwards another puncture was made, and a small quantity of pus taken away, subsequent to which recovery went on satisfactorily, no further interference being required.

The cases I have narrated are sufficient to demonstrate that

operations hitherto of a somewhat formidable nature are reduced to comparatively minor proceedings by the use of the aspirator. The ease with which large quantities of fluid can be withdrawn from the chest through exploring needles of extreme minuteness is more especially shown in case No. 2. So convinced, indeed, am l of the entire harmlessness of the operation, that I should not hesitate in doubtful cases to satisfy myself as to the existence of fluid by an exploratory puncture, and this facility of penetrating the chest wall will prove, I feel certain, of inestimable service in the treatment of pleuritic effusion; for a considerable experience has taught me that the evacuation of the fluid in the very early stages by mechanical interference offers the surest means of attaining the great end in view—the complete recovery of the compressed lung.

The aspirator is eminently applicable to the treatment of pelvic abscess situated near the uterus, and necessitating puncture through the walls of the vagina; effusion of fluid into the larger joints and bursæ, and for tapping the bladder above the pubis in retention of urine. The latter operation is deprived of nearly all its dangers, and is reduced to a very simple proceeding by the employment of this instrument.

In conclusion, I have little doubt that in cases of chronic hydrocephalus the fluid may be gradually evacuated without any of the dangerous consequences which have hitherto almost invariably followed all mechanical efforts for the relief of this almost hopeless malady.

Note.—Since the above was written, an aspirator, invented by Dr. Vald. Rasmussero, and specially designed for thoracentesis, has been fully described by Dr. J. W. Moore, in the Dublis Quarterly Journal of Medical Science for August, 1871. Dr. Moore says—"The distinctive character of the instrument depends on the substitution of a two-water-way stop-cock for the two separate and single cocks in Dieulafoy's apparatus; but more especially on the insertion of a vent-piece of peculiar mechanism in the stead of either Dieulafoy's two ordinary stop-cocks, or the two-water-way cock."

It will be seen that this instrument differs from Dieulafoy's, inasmuch as the valve arrangement does away with the necessity of turning the ordinary stop-cocks off and on at each aspiration; but this advantage is, I think, more than counterbalanced by the somewhat complicated character of the mechanism, and its consequent liability to get out of order—indeed, Dr. Moore himself says that "small tibrinous clots may become attached to the valves and interfere with their action."

Dr. Moore does not appear to have tested the instrument, and, in the absence of any actual illustrations of its use, I continue to prefer Dieulafoy's apparatus, which, in my hands at least, has fully answered all practical purposes.

ON RELAPSING FEVER.

BY ISAIAH DE ZOUCHE, M.D.

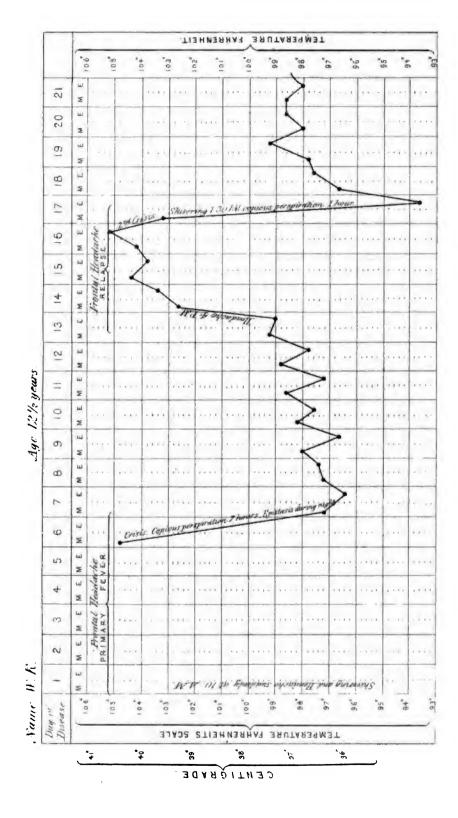
The recent, or still-present, epidemic of relapsing fever in Liverpool, has given ample opportunity for the observation of the principal features of that disease. As medical officer to one of the districts most heavily visited by the epidemic, about one thousand cases came under my care, and from notes of these the following paper is compiled.

I am able to trace the commencement of the epidemic in Liverpool to the early part of 1869, although it was not officially reported until November of the same year. It was observed by Dr. Hermann Weber in London, in September, 1868, when some Polish Jews, suffering from this disease, were admitted into the German Hospital*. The subsequent progress of the epidemic has been recorded in the various medical journals. It appears desirable that the principal features of epidemic diseases on each occasion of their appearance should be recorded, especially of those which occur at long intervals. The description of relapsing fever, as here given, refers exclusively to cases which came under my observation in the present epidemic in Liverpool. In the general description, the present tense is used for convenience. The following notes will illustrate the course of the disease in an ordinary favourable case.

Alice B., aged thirteen years, came under observation on the 2nd November, 1870, the fifth day of the fever. On the 29th October she was perfectly well until six p.m., when she was suddenly seized with shivering, frontal headache, and vomiting.

5th day.—Frontal headache continues; she has pain in the epigastrium; is inclined to "ramble" in talk, but answers clearly

^{*} Lancet, 18th February, 1869.



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when spoken to. Face of a faint straw colour; conjunctive tinged yellow.

6th day.—Crisis occurred by very copious perspiration during the evening. Temperature 98.0°. No pain or uneasiness.

10th day.—Says she is very well, and wants to get up. No pain whatever; bowels constipated.

13th day.—Well in the morning; towards evening became sleepy; tongue dry in the centre. Temperature 102.3° at eleven p.m.

14th day.—Relapse. Sharp frontal headache and shivering at 12.30 a.m.

15th day.—Appears in great distress; moaning and complaining of her head; respiration sighing; pain on pressure over liver and spleen; bowels constipated for three days.

16th day.—Crying out with pain in the head; says she cannot sleep on account of pains all over the body; a little delirious; respiration 40.

17th day.—Temperature 104.3°. Face of a pale straw colour; has intense frontal headache. *Crisis*. During the day she was purged three times, and vomited. In the evening she said she was quite well, with the exception of pains in the hands; the tongue was clean and moist, and the respiration placid.

18th day.—Complains greatly of pains in the hands and feet; heart's action very slow, with a reduplication every four or five beats. Pulse 52.

22nd day.—All pain has disappeared; she was allowed to get up and convalesced favourably.

General description. In the majority of cases the bowels have been constipated for several days before any other symptom appears, and the tendency to constipation continues throughout the disease; but the first symptom which attracts attention is generally a rigor, a sudden sensation of cold and shivering "all over," and very great weakness. Frontal headache of a sharp neuralgic character sets in almost immediately, or in a few hours after the rigor. The shiverings continue at intervals, from half-an-hour to several hours. Vomiting and retching set in early; with some ceasing in a day or two, with others continuing until the crisis.

The matters vomited are yellowish, or greenish yellow, consisting of bile and the various secretions from the stomach. loss of appetite, and very great thirst. The skin is pungent to the touch, the temperature attaining a height of 103 to 105 degrees on the sixth day. The temperature does not reach its climax until the moment of crisis. In addition to the headache, there is pain in the epigastrium and in the right or left side, or both. The liver and spleen are sometimes found enlarged, the spleen frequently so. Many patients complain of sore throat. The fauces, on examination, are found to be slightly reddened, and one or both tonsils are enlarged. In the febrile stages the cheeks are flushed, but the remainder of the face is pale, or rather of a straw colour; the conjunctiva has a faint yellow tinge. The appearance of the patient is peculiar, and in many instances quite characteristic. The eyes appear somewhat sunken, from the dark circle which surrounds them; they are clear, but have a despairing woe-begone look, not easily to be forgotten if once seen. The whole face expresses the consciousness of pain and helplessness. The tongue is red and glazed in the centre, yellowish-white outside the centre, with the red papillæ prominent, and red at the edges; a small portion of the extremity of the tongue remains red.

The headache and febrile symptoms continue for about six or six and a half days, increasing in intensity as the moment of crisis approaches.

Notwithstanding the high fever, delirium is not present as a rule. When the fever is at its height, the pulse attains a rapidity of 120 to 140 beats per minute. It is of very variable strength, in some cases of moderate fulness, in many it is extremely weak.

In the apyretic interval, I have frequently found it to intermit. During the first days of the fever the pulse may intermit in weak subjects. The action of the heart is feeble, the first sound being scarcely audible in severe cases. With the increase of the fever, that is just before the crisis, the pulse becomes considerably quickened, and ceases to intermit. As the crisis approaches, all the symptoms become intensified; the pains in the head and throughout the body increase; the respiration becomes very frequent, as much as thirty or forty in the minute, and the patient is

extremely restless. Friends become alarmed, and frequently send in haste for the medical attendant, under the belief that dissolution is impending. The patient complains of difficulty of breathing, "choking about the heart," and often insists on leaving his bed to get more air. The dyspnæa is out of all proportion to the abnormal amount of secretion which may be in the bronchial tubes. I have frequently examined the lungs at this stage, and seldom found disease present; sometimes the merest moist crepitation in the bases, rarely even that, unless the patient have had old lung disease. (The bronchorrhea of relapsing fever occurs later.) These exaggerated symptoms It is purely nervous respiration. announce that the crisis is at hand, and it is at length ushered in by a rigor. Perspiration literally pours off the patient, the night dress and sheets being, as patients say, "wringing wet." continue from an hour to nine or ten hours, or even more. mina are sometimes evolved on the chest. The temperature falls even two or three degrees below the normal standard. Crisis does not always occur by perspiration, however. The latter may be replaced by diarrhea, the evacuations being of a watery character, or by vomiting. Hæmorrhages frequently occur at this stage, the most common being hæmorrhage from the nose, seldom to the extent of more than a few drachms; and in weak persons, and others suffering from severe forms of the disease, there is often a copious eruption of petechiæ. The petechial spots are small, except in very severe cases. They are evolved all over the body.

Miscarriage occurs invariably in the case of pregnant women; sometimes during the primary fever, more frequently during the relapse. The fœtus is usually dead.

Most frequently the crisis brings a sense of great relief, and the patient, when questioned, says he is quite well, with the exception of feeling weak. The appetite returns, and thirst ceases; the tongue becomes comparatively clean, and there may be no symptom whatever of distress until the relapse. Most patients get up, and some even try to follow their usual avocations.

In other cases, exudation of mucus into the bronchial tubes sets in about one day after the crisis, causing a distressing cough. The mucus is viscid and tenacious, producing a good deal of spasm in

Blood is frequently expectorated with the mucus, coughing. causing the affection to resemble whooping cough, especially in Severe pains in the limbs and joints occur, and about the second or third day after the crisis some of the latter may be found to be swollen. The metacarpal and phalangeal joints are especially liable to be attacked, but any joint may suffer. There are sharp muscular pains in the loins, in the calves of the legs, the thighs, the arms, the muscles of the neck, of the abdomen, &c. Scarcely any part of the body is exempt. Patients cry out with pain, and are unable to sleep, and at this stage the disease may be mistaken for acute rheumatism. If the patient's eyes are now examined, some congestion of the sclerotic will be found; the affection of the eyes, however, is usually more troublesome after the relapse. The pulse during the interval is remarkably slow, from fifty to sixty per minute in adults, and it intermits occasionally. The contraction of the ventricles is slow, and reduplication of the second sound occurs. An anæmic murmur is often heard Meanwhile the temperature is rising at the base of the heart. day by day, and a couple of hours before the rigor of relapse sets in, it has risen three or four degrees. Between the thirteenth and fourteenth days the rigor occurs, and the frontal headache and vomiting return. The relapse may be more or less severe than the primary attack. The yellowish hue of the face again appears, and the cheeks are flushed. The tongue, which had become clean, is again coated with a yellowish-white fur, the skin is pungent to the touch, and the patient complains of pains in the sides, in the epigastrium, and throughout the body. There is, in short, an exact repetition of the primary symptoms.

The temperature remains at a high point, between 104° and 105°, and gradually reaches its climax, when, on the seventeenth day from the commencement, and the fourth from the rigor of relapse, a second crisis occurs, much the same as the first. Perspiration again pours off the patient, petechial eruptions and critical hæmorrhages occur, sudamina appear, and the temperature falls below the average of health, and the patient appears convelescent. There is no essential difference between the course of the relapse and that of the primary fever, except perhaps that the

febrile period of the relapse, that is from the first rigor and headache until the crisis, is shorter by a day or two than in the first attack. The sequelæ, also, are much the same, and occur in the same order, namely, muscular pains, swelling of the joints, ophthalmia, bronchitis, &c., but these are more persistent after the relapse. There is every variety of convalescence; some get well apparently without any trouble, others have unmistakable reminders of the disease for weeks or months.

Notes on the principal symptoms and complications.

Mode of Attack.—Usually by rigor and headache. In several cases of children, however, the fever commenced (they "took it," as their mothers said) "with a heavy sleep," and slept the greater part of the day, showing evidence of pain in the head in the waking moments. The accession of the relapse was also marked by drowsiness. In a few instances there was diarrhea, as well as vomiting for the first couple of days.

Suddenness of Invasion.—The following is an instance: A girl took a "note" to the workhouse for her mother, who was suffering from relapsing fever. On her way she herself was seized with shivering and headache, and with difficulty reached her destination. She was so ill on her arrival there that she begged to be admitted into the hospital, and was taken in at once. Patients can usually mention the very hour of the attack; thus they have told me they were "quite well until half-past six in the morning," or "seven o'clock in the evening," &c.

THE APPETITE.—In a few instances the appetite seemed unimpaired during the whole course of the disease, excepting for a few hours after the relapse, and preceding the crisis. The patients complained that they were being starved, and asked for meat.

Sore Throat was very common, frequently causing the disease to be mistaken for scarlatina, on a rough diagnosis.

COLOUR OF THE SKIN.—In the great majority of cases it was more or less of a straw colour, becoming deeper and changing remarkably in shade as the crisis approached. In some the palms of the hands and the soles of the feet were of a well-marked light

saffron colour. Two cases had decided jaundice, with very great pain over the liver, and bile appearing in the urine.

RASH.—There was no constant rash observable, the petechia of crisis not coming under that head. In one undoubted case of relapsing fever there was an eruption something like that of rubeola over the body. In another, which I believe to have been relapsing fever, there was a rash indistinguishable from that of typhus. My notes of the case are as follows:-Mary M., aged twenty-two, shivered and vomited on 7th September, 1870. On the 11th she felt better, and was able to get up and sit at the hall In the evening she went to bed, and remained there until the 14th, when she had a copious perspiration, and slimy evacuations from the bowels. On the 16th she went to hospital, and I lost sight of her. There was a small mulberry rash exactly like that of typhus, and a few petechiæ over the body. The tongue was brown and moist; she had a cough, and expectorated thick phlegm with a little blood. Her mind was perfectly clear, and there had been no delirium. In three instances I noticed a scarlet efflorescence exactly resembling that of scarlatina. The occurrence of this rash, together with sore throat, might cause the disease to be mistaken for scarlatina, a mistake which I have known to occur Dr. Robertson, who had charge of the Ashfield several times. Street fever sheds, also noticed a similar rash.

THE TONGUE.—In a great many patients the tongue was tranversely fissured, especially if the symptoms were at all severe. In those assuming a typhoid character, patches of ulceration frequently occurred on the tongue and cheeks; sometimes there were deep brownish-yellow incrustations, resembling a fungoid growth.

THE HEART AND PULSE.—Dr. Murchison says that "the diminished impulse, impairment, or absence of the first sound so common in typhus, does not occur in relapsing fever." My experience does not agree with this, especially in cases which were at all more severe than usual. In these I found the impulse so much lessened, that the first sound resembled a faint muscular murmur, heard with difficulty, or quite inaudible. The weakness of the first sound occurred in so many cases as to attract my particular attention to this symptom, and also the irregularity of

the heart's action, a number of quick contractions being followed by a number of slow ones, or after a variable number of beats, a short quick sound, or reduplication took place. The intermission of the pulse ceased altogether after the second crisis. The pulse, like the temperature and respiration, was higher in the morning than in the evening.

Hæmorrhages.—Epistaxis was very common. I have also seen instances of critical hæmorrhages from the bowels, from the uterus, from the stomach, and from the lungs, in the abovementioned order as regards frequency. In women who were at the menstrual period, the flow was increased; in those past the menstruating age it took the form of a regular uterine hæmorrhage, a dangerous, but fortunately not a frequent complication. One district patient, who was suffering from a second relapse, told me she had had a discharge from the ears when in hospital, where she had been sent in the first instance.

THE PETECHLE remain for five or six days, and are persistent after death, if death occur at this period. In infants, old people, and severe cases, they were seldom absent at the critical stage, sometimes limited to a few spots about the chest, sometimes copiously dispersed over the body.

ODOUR OF THE BODY.—I noticed a peculiar sickly smell from the body, but less marked than that of typhus, and differing from it.

Delirium occurred in a few cases. In some it was the result of excessive pain apparently; in others it appeared to be caused by the overwhelming nature of the fever poison, as occurs in other fevers. These cases resembled delirium from drink; and in a third set of patients it resulted from exhaustion.

CRISIS by perspiration is the most favourable. Crisis by purging and vomiting is dangerous, on account of the exhaustion which is liable to be induced.

THE INTERVAL.—The temporary state of ease conferred by the crisis is in remarkable contrast to the previous suffering, and to the relapse which is to follow. One patient, a woman, whose case resembled typhus, such was her prostration in the primary fever, was out chopping wood when I visited her three days afterwards.

Such patients believe they will have no relapse, and laugh at the physician's supposed mistake. Hospital patients often insist on being discharged, and they are not a little surprised when the relapse occurs.

Variations in the course of Relapsing Fever.

THE RELAPSE.—The relapse may be delayed beyond the usual time. In one case it did not occur until the thirty-third day from the primary attack; in another not until the thirty-ninth day. I have noticed instances of two and three genuine relapses. Second and third relapses must not be confounded with distinct new attacks. Many of the patients discharged from hospital were again attacked with relapsing fever several weeks afterwards. This I attributed to their returning to the fever atmosphere of their own homes, where fresh cases were continually occurring, and such weakened subjects appeared very susceptible to the contagion.

THE CRISIS.—There are also variations in the time of crisis. In two cases particularly observed, a partial relapse took place on the fifteenth day, followed in a few hours by an imperfect crisis (in one by epistaxis, in the other by perspiration), with some relief to the headache. On the sixteenth, seventeenth, and eighteenth days, however, the febrile symptoms continued, attaining their greatest intensity on the nineteenth day, and followed by a full crisis by profuse perspiration. The second crisis occasionally takes place in a different manner from the first; thus the first may be by perspiration, and the second by purging and vomiting. This is not common, however.

We have the authority of Dr. Murchison for saying that the relapse does not occur in every instance. In all the cases which have come under my observation, however, I have been able to ascertain that it did take place. It might be later than usual, or so slightly marked as not to prevent the patients from working, but on questioning them closely, I found that on a certain day they had a slight shivering or headache, or had been unable to est their food, or experienced some feeling of malaise. In a few cases the fever of relapse was composed of a series of exacerbations and remissions, the patient having a rigor every day at a

certain hour, and some perspiration, with relief to the headache; and this went on until the crisis.

Sequelæ of Relapsing Fever.

Swelling of the Joints usually subsided in a few days, but occasionally assumed the character of chronic rheumatism; the hands and wrists were usually affected, more rarely the knee and ankle joints.

MUSCULAR PAINS very often remained for weeks, especially across the loins and in the legs.

Bronchitis.—This appeared to be the result of passive, but copious, exudation into the bronchial tubes without evidence of active inflammation of the mucous membrane, so that the term bronchorrhæa would be more accurate. The resemblance to whooping-cough in children was very striking. In a few cases moist crepitation could be heard at the bases of the lungs, and rough sounds in the larger tubes, but no sibilant râles.

OPHTHALMIA.—In most instances this appeared limited to simple vascularity of the sclerotic on superficial examination, and soon disappeared. In some, the appearance of the eye was the same as that which was formerly described as rheumatic ophthalmia, the pink congested vessels of the sclerotic running towards the cornea. There was pain in the eyeball, intolerance of light, and increased lachrymation. In one case, the cornea was burst from the pressure of fluid effused within the globe of the eye. In another, there was ulceration of the cornea in both eyes. The amaurotic symptoms were more noticeable after the second crisis. A few patients complained of it for several months.

Anasarca was a very frequent consequence; the feet and legs being affected, and the thighs and scrotum occasionally, but rarely. It was very amenable to treatment. The dropsical effusions came on rather suddenly, usually after the second crisis, and subsided in a few days, or a couple of weeks.

Parotitis.—The parotid and lymphatic glands of the neck were swollen in some instances. In two patients there was decided inflammation of the parotid, proceeding to abscess in one case.

DEAFNESS occurred in three cases, in one of which the hearing

has remained impaired for several months, although gradually improving.

EPISTAXIS sometimes occurred at an uncertain period after the second crisis.

DESQUAMATION OF THE CUTICLE in small fine scales occurred in many cases about the second week after the crisis.

THE HAIR also fell off in several instances.

The Prognosis

in relapsing fever is favourable as a rule. The average low mortality may, however, lead the physician to overlook the tendency to death in individual instances, and when the symptoms are at all more striking than usual, the prognosis should be guarded. In the fatal cases which I observed, the unfavourable symptoms were jaundice, profuse uterine hæmorrhage, large petechiæ or purpuric spots, sordes and ulcerations about the tongue and mouth, incomplete defervescence after the first crisis, a state of extreme restlessness, and nervous exaltation after the second crisis, delirium, combined with an extremely weak and rapid pulse, and inaudible first sound of the heart; a low state of debility, or marasmus, a kind of hectic, sometimes proved fatal at the end of several weeks amongst very poor, badly fed patients.

Modes of Death.

In fatal cases death may occur by syncope, especially at the time of crisis, from nervous exhaustion (evidenced by sleeplessness and "spinal" respiration); from excessive diarrhœa, probably also from effusion of serum into the ventricles of the brain (see case of Richard D.); in women, from uterine hæmorrhage, or from the exhaustion of premature labour and hæmorrhage combined; in children, from the exhaustion of vomiting; and in infants, from inability to take the breast. In one fatal case the patient, a child aged six years, became suddenly comatone during what seemed a favourable convalescence. In chronic cases death occurs by a process of exhaustion. I have only seen one instance in which I could attribute death to premise

With the best of care a certain number of deaths will doubtless occur, but a fatal termination is exceptional in relapsing fever. A great many of the deaths I have seen, resulted directly or indirectly from want of proper nourishment during the fever or afterwards, or from previous exhaustion.

Post Mortem Appearances.

Owing to the small mortality of relapsing fever, and the difficulty of obtaining permission to make post mortem examinations, I have only been able to make autopsies in three cases; in two of these there were no very distinctive appearances. The third was that of a man who died on the seventh day of the fever; this would correspond to the period of crisis. The examination was made hastily, and under great difficulties.

Richard D., aged forty-five years.

THE SKIN showed a copious petechial eruption.

Brain.—Arachnoid raised up by fluid effusion underneath. On puncturing it a quantity of serum escaped. At the longitudinal sinus, somewhat posteriorly, the arachnoid seemed opaque. The surface of the brain was very pale, and a section showed a pale appearance. The ventricles were full of serum. The total amount of serum in the ventricles, and under the arachnoid, was about eight ounces. The bloodless appearance of the brain was remarkable.

Lungs.—A few old tubercles in the apex of right lung. Lungs crepitated throughout; some hypostatic congestion.

HEART.—No serum in pericardium; black soft blood-clot in right auricle, and continued into the ventricle. Some decolorised fibrine in left ventricle, extending into the aorta.

LIVER.—Somewhat enlarged. No blood exuded on section. The organ appeared healthy to the naked eye.

GALL-BLADDER full of bile.

Spleen, about three times the normal size; portions of the surface were of a lighter colour than the rest, and gave way under slight pressure. Under this soft exterior were cavities which would admit the top of the index finger. The walls of these cavities were soft and broken down, not unlike the interior of an abscess, only

that there was no positive pus. The remaining substance of the spleen was tolerably firm.

Kidneys.—Both enlarged. Section showed fatty degeneration. Stomach and Intestines not examined.

Causes.

The state of the sewers, and the nature of the material used for house foundations, have recently been the subject of investigation by Dr. Stallard, and by Drs. Parkes and Sanderson. From their reports it would appear that the sewers are extremely defective, many of them containing copious deposits, and that the materials of which the foundations are composed are, in many cases, capable of generating noxious gases, which may enter the The influence of these conditions in the production of fevers can be easily appreciated. To these should be added poverty, overcrowding, and filth, faulty construction of houses, and the great court system. The poor of Liverpool may be said to be in a state of chronic debility from various causes, which usually appears in the returns under the general term of "bronchitis." They are thus at all times an easy prey to any epidemic which may be prevalent. Their food is, for the most part, bread and tea, the latter of very doubtful quality, and occasionally a little fish. The tea is taken as a stimulant, replacing equally cheap, and more nutritious articles of diet. Dyspepsia and constipation are the result of this system of living. I cannot but regard the general use of tea by the lower classes as a great evil. Children suffer especially from the defective quality of the food, as the number of ricketty and strumous children brought to our hospitals and dispensaries testifies. In addition to the stimulant tea, should be added the stimulant, or rather depressant, alcohol, which unfortunately plays a large part in the production of the chronic debility of the poor.

In a great many of the houses the access to the upper rooms is through the room on the ground floor. The staircase acts as a shaft for the communication of the air in the lower room with those above. Should there be fever in this apartment, it will almost inevitably spread to the families living upstairs. In some houses beds are made in a closet under the stairs, or in a kind of locker in the wall. In others the family bed is in a recess, effectually shielded from any stray draft which might reach it from a window habitually kept closed. The courts are a blot on the town. If in their construction it was intended to exclude light and air, and favour uncleanly habits, that end could hardly have been more fully attained than it has been in Liverpool. Many of the courts are built up at one end; into many direct sunlight never penetrates. Drs. Parkes and Sanderson state, with regard to the courts, that "few constructions could be better adapted to the spread of contagious diseases."

If relapsing fever can be generated *de novo*, as Dr. Murchison believes, the conditions for its origin in this way appear to exist in Liverpool in a constant quantity.

Pathology.

It appears evident that there is received into the system a poison which, after a variable period of incubation, gives rise to the symptoms already enumerated. The poison is multiplied in the bodies of those affected, and is propagated by infection and contagion.

Infectiousness.—It is the most infectious of all fevers with which I am acquainted, with the exception perhaps of small-pox. Amongst the poor the rule has been that it has attacked in succession every inhabitant of a house in which it has once gained a footing. As many as sixteen cases have occurred in one house. The poison holds tenaciously to the house, endangering those who may inhabit it for months afterwards.

PATHOLOGY OF THE SYMPTOMS.—The poison of relapsing fever appears to have a specific action on the nervous system, and the stages of the disease might be mapped out by the nervous phenomens. There is (1.) General nervous excitement culminating at the crisis; (2.) Depression of the nervous system, which tends to return to its normal condition, but gradually rises beyond this; (3.) A state of excitement which again reaches its climax by a crisis; (4.) Depression, the normal condition being gradually resumed.

In the first instance the action of the poison on the nervous system is evidenced by the sharp frontal headache and occasional delirium, and pains throughout the body. I am not disposed to think that the primary headache is the result of cerebral congestion. There is, it is true, flushing of the cheeks, but the remainder of the face is pale, and the eyes are not congested. The congestive affection of the eyes occurs at a later date, when the joints and muscles are the seat of pain. I think it very probable, however, that congestion of the cerebral vessels may occur as the fever progresses, especially near the crisis. The hurried and difficult respiration before the crisis, would seem to be the effect of the fever-poison on the nerves of respiration, for at the stage at which it occurs the lungs are not diseased as a rule. The peculiar action of the heart, and intermittency of the pulse, will also admit of explanation by a similar theory.*

The crisis is, doubtless, an effort of Nature to eliminate the fever-poison. Why the first crisis is insufficient it is difficult to answer. It may be that the blood undergoes some further change or "zymosis" after the first crisis, requiring a second fever to restore it to its healthy condition. It may be that Nature kindly divides an exhausting disease into two periods, giving the patient an interval of rest, in order to husband his strength, and enable him to undergo by two efforts a severe crisis, which could not be accomplished at once without danger.†

The coloration of the skin and perspiration of crisis may be called an acute form of chromidrosis, but like that affection, its pathology is obscure. It is most intense just before the crisis, in many cases being hardly observable when the perspiration has ceased.

^{*} This, it will be remembered, occurs most frequently during the apyretic interval, or period of depression. Dr. B. W. Richardson considers intermittency of the heart to depend on depression of the nervous system, the result of mental excitement. (Discourses on Practical Physic, p. 49.) There is certainly much mental excitement before the crisis, the patient being often in terror from the severity of the symptoms.

[†] Dr. Hudson accounts for the relapse as follows:—"In my report of the epidemic of 1847-8, I mentioned that in every case in which I observed the persistence of splenic congestion and enlargement after crisis, relapse followed. The cause of relapse I believe to have been the gradual commingling with the circulating mass, of a large quantity of blood, which, lying by, so to speak, in the congested organ, did not share in the depuration of the mass during origis." "On the Study of Fever," p. 175.

The bronchorrhea, swelling of the joints, edema of the feet, and muscular pains, are due, I believe, to local exudations of the watery parts of the blood, containing a portion of the fever-poison which did not escape at the time of crisis. These exudations, it will be remembered, follow the crisis, being, in fact, a continuation of that process, occurring in an abnormal manner; and they are more or less severe in their effects, according to the incompleteness or completeness of the crisis proper. In this way the occurrence of effusion of serum into the ventricles of the brain at the time of crisis (case Richard D.), would be explained. The tendency to the exudation of the serum of the blood may, perhaps, cause some forms of ophthalmia met with after relapsing fever. In one case, before referred to, the increased aqueous humor burst through the cornea.

THE URINE.—Owing to the great pressure of work, I was unable to make any satisfactory observations on the urine, and very much regret this deficiency in my paper. I examined the urine frequently for albumen, however, but only found it present for a few days in one case. In the urine of patients suffering from ædema of the feet, I found under the microscope crystals of oxalate of lime, uric acid, and urates, but no tube casts.*

The temperature follows the course to be expected from the nature of the disease; high during the febrile stages, and low or normal in the intervals. The very low temperature after crisis by perspiration is to be accounted for by the great evaporation from the skin. In three cases observed, I found the temperature in the morning higher than in the evening. This is a phenomenon which I am at a loss to explain, the rule being in fevers that the evening temperature is the higher.

THE EXCRETA.—The evacuations, whether procured by medicine or occurring naturally, are not unhealthy; they are sometimes a little darker than normal.

Diagnosis.

In seeking for the alliances of relapsing fever, just as we look

• See, however, note p. 102.

for the nearest allies of a natural order of plants, I am disposed to place it next to the scarlatina class of diseases, especially those forms associated with acute rheumatism. The points of resemblance are briefly these: sore throat, swelling of the joints, cedema of the feet, and desquamation of the cuticle. The resemblance is very marked in those instances in which a rash appears.* The crisis by sweating, diarrhea, or epistaxis, which sometimes occurs in rubeola, would bring relapsing fever into connection with that disease; while the occurrence of the remission would show an approach to dengue.

The diagnosis has to be made from simple continued fever, scarlatina, rubeola, typhus, typhoid, bronchitis, rheumatism, jaundice, purpura, intermittent fever, and alcoholism. It is hardly necessary to point out the distinctions. Relapsing fever has often been confounded with typhus, or considered identical with it. I have seen a man lying ill with typhus, while his wife beside him was suffering from relapsing fever. Nor has it any protective power against typhus. Two patients (sisters) who were under my care for relapsing fever in July, 1870, were treated by me for typhus in July, 1871.

Treatment.

The patient should be kept in bed until the second crisis has passed, although it is not easy to enforce this direction. The sequelæ are more severe if the patient get up and move about in the interval. The disease is, I believe, quite uninfluenced in its course by medicines; but relief is experienced from aperients, anodynes, and remedies to allay the distress caused by vomiting. Purgatives are required from time to time. Castor oil seemed to me the most useful. The vomiting, doubtless, answers some salutary indication; it probably serves to unload the congested vessels of the spleen and liver. I have, therefore, not been in the habit of checking it, but merely of moderating it if excessive. My practice has been to give lime-water with milk, which I found beneficial. Small pieces of ice sucked occasionally are also useful

Dr. Hermann Weber found renal tube casts in one of his cases.—Lancet, February 18th, 1869.

as well as agreeable to the patient. Effervescing salines are grateful to the patient, and useful as diuretics. The latter seemed to be indicated on account of the tendency to the accumulation of ures in the blood.* The pain and sleeplessness should be relieved by an opiate. This is very important where there is any danger of nervous exhaustion. I have found the hydrate of chloral very valuable. Bronchitis should be treated on general principles. The food should be light and nutritious during the whole course of the disease, and should consist of milk, beef-tea, corn-flour, &c. Patients usually crave for meat and their ordinary diet after the first crisis, but this I consider to be injurious. Stimulants are not required as a rule, but should be given when the symptoms indicate debility. Old people will usually require wine or brandy, and infants, who are unable to take the breast, may require a little wine until the crisis is past. The rheumatic affections of the ioints and muscles following relapsing fever are best treated by diuretics, tonics, and liberal diet. Post febrile ophthalmia in this epidemic seldom required active treatment. In a few cases I found it necessary to leech the temples, apply a succession of blisters, and give iodide of potassium with bitter tonics. The results were To prevent, if possible, the relapse, I have only tried quinine in doses of five grains three times daily during the interval. I tried it in three instances, and in all curiously enough the relapse was late in its occurrence. In one it occurred on the seventeenth or eighteenth day; in another on the thirty-ninth. But I have seen the relapse delayed where no medicine whatever was given.

^{*} See "Murchison on Fever."

TABULAR REPORT OF THIRTEEN CASES OF TRANS-FUSION OF BLOOD; WITH DIAGRAM OF THE OPERATOR'S INSTRUMENT, AND OBSERVATIONS.

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If "forewarned-forearmed" is in any case to be the motto of a medical man, assuredly it should be so with respect to the operation of transfusion. The mind needs to be made up beforehand as to its propriety, and the mode of operating; and instruments, simple or special, must be easily procurable, or the chance for the patient may have fled ere the operation can be performed.

In the hope of contributing his share to this desirable object, the writer condenses and tabulates the results of his experience since 1848. Cases I. and X. were his own patients, the other eleven cases were under well-established practitioners, who called him in to operate, and lent their aid. The first seven cases will be found more at length in the Liverpool Medico-Chirurgical Journal, January, 1857, but have not, to the author's knowledge, been gathered into the reports of any compilers on this subject.

Table of Thirteen Cases in which Transfusion (with pure Blood) was used by Mr. A. Higginson, Surgeon.

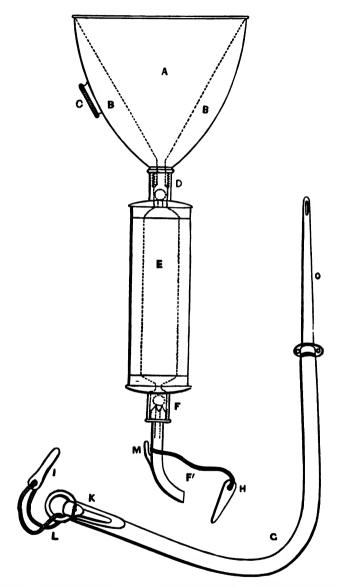
NO.	DATE, ETC.	CASE.	BLOOD INJECTED.	RESULT.
I.		Extreme prostration from suckling twins. Confined of twins; fourth labour, July 7th, 1847, having had dropsy for three months previous. Suckled both children till March, 1848, and became exhausted thereby. Had diarrhose, vomiting, faintings, and appeared near dying. Transfused, with improvement of pulse, and appearent sleep. A rigour succeeded, then reaction and excitement, with delirious singing. Slept, and took food; went into the country ten days afterwards, and had no relapse. Died three years afterwards of phthisis, of six months duration.	From female	Successful

no.	DATE, ETC.	CABE.	BLOOD INJECTED.	RESULT.
II.	Dec. 7, 1850. Mrs. R., mo- ther of several children.	Hæmorrhage after birth of child, on expulsion of placents. Funis very short. One large gush of blood prostrated the lady. Her sister supplied the blood. Re- covery was speedy and striking.	10 to 12 oz. From sister.	Successful.
ш.	Feb. 7, 1851. Mrs. T. mo- ther of a large family.	Hemorrhage from Placenta Pre- via; sudden and exhausting: pla- centa removed when I was called to transfuse. Patient much sunk and livid. Extreme restlessness. No amendment from operation, which was cut short by the pipe being jerked out of the arm. She died immediately undelivered.	8 oz. From female servant.	Unsuccessful.
IV.	Sept. 12, 1851. Elizabeth E., et. 87.	Hemorrhage from partly adherent placenta. Uterus emptied; no more bleeding. Sixth-labour: at Liverpool Lying-in Hospital. Patient gradually sunk seven days after transfusion. P.M.: Uterus internally purulent and offensive. Other viscera ansemic, free from disease; veins healthy.	12 oz. From female servant.	Recovered, and lived for seven days.
₹.	Ladies'Charity case; in very low life.	Partial Placenta Previa. Sinking. Not delivered. Supply bad; operation did little good; 12 ounces of salt and water injected, with some improvement. Delivery. Death.	5 or 6 oz. Two females; very poor.	Unsuccessful.
VI.	Nov. 10, 1856. T. C., set. 21, at Workhouse.	Mania. Loose character and attempted suicide. Had refused food for a fortnight, and, in spite of enemata and stomach-pump was sinking. No pulse in radial arteries, 130 in brachial. Resp. 26; therm. 94° in axilla. Unconscious; offensive sputs; expression painful; eyes turned up, lids closed, and with dark marginal ring. Transfusion easily performed, with varing improvement of pulse, breathing and countenance. Swallowed after a few hours, and put out her tongue; relapsed and died during the second night. P.M.: Serum effused on surface of brain, arachnoid opaque; brain firm, vessels of pia mater somewhat full. Left lung adhered at upper lobe, and, when torn away, offensive pus escaped from small cavities. Both lungs dense with congestion and cedema; no tubercles. Heart contained fluid dark blood.	20 oz. Female.	Doubtful benefit. Lived 40 hours.
VII.	36 mother of	Placenta Prævia, with hæmor- rhage; delivery and subsequent draining. Transfusion, and rally of the patient. Return of flooding. Death in 3 hours.	12 oz. From a female friend.	Improved, lived three hours Fatal homor rhage returned

NO.	DATE, ETC.	CASE.	BLOOD INJECTED.	RESULT.
VIII.	May 25, 1859.	A lady, in her first confinement, had post partum hemorrhage, some miles away from Liverpool. Some hours passed without rally before transfusion could be had recourse to. A fair amount was injected; but death took place almost immediately.	7 oz.? Female servant.	Unsuccessful.
IX.	April 19, 1860.	Abortion (? 5½ months), completed, with much loss and draining. Lady much sunk; blanched, sick and restless. Responded at once to the transfusion, and made a good recovery.	8 oz. Female servant.	Successful.
х.	June 18, 1860.	J. C., set. 51, hospital patient. Hemorrhage from fore-arm, after phlegmonous erysipelas. Brachial artery tied immediately. Patient sinking; no more bleeding. Rallied on transfusion; arm amputated two days after, and the man made a good recovery. He is now living and well. The daughter-in-law died, after two years, in phthisis.	10 oz. (about) From his son's wife.	Successful.
XI.	Oct. 80, 1862.	Case of Fallopian fectation, diagnosed as ruptured into the peritoneal cavity, and the patient sinking from concealed hemorrhage. Vein opened very obscure. A large thrombus resulted from the injection, and too little entered the system to do any good.	? 4 oz. From the hus- band.	Un successful.
XII.	Oct. 10, 1863.	Post partum hemorrhage. No improvement took place from remedies while waiting for a subject to supply the blood. Operation speedily effectual. The lady made a good recovery	? 6 oz. From a la- bourer's wife.	Successful.
хш.	June 4, 1871.	A lady, in her eighth confinement, commenced her labour at full time, with severe pain in the hypogastrium, and much tension of the abdomen. The os uteri was dilated by the finger, and liquor annii discharged, with relief to the pain, and the labour was expedited as much as possible. Twins were born; the first dead and decomposing, the second living. With the placente, one of which had evidently been detached a considerable time, a large amount of clot was expelled, and sinking occurred. Tinct ferri diluted, applied to the uterus. Several hours passed without rally, and transfusion at once restored her to safety. She recovered well, and bore a long journey a month later.	8 oz. (nearly.) From female servant.	Successful.

Of these thirteen cases, one was surgical, and did well (Case X.); two were medical; Case I. eminently successful, Case VI. lived forty hours, and was not likely to benefit more permanently by the operation; ten cases were obstetric, including XI. (fallopian fœtation case); four of the ten were unsuccessful, and six successful. Of the four unsuccessful, two were transfused while undelivered, another was the fallopian case, and one in the country. successful obstetric cases were absolutely satisfactory in immediate In all of these thirteen cases blood fresh from the arm, without manipulation or admixture, was employed, the largest quantity injected being 20oz., and the smallest 4oz.; average of all the cases about 9oz. From the female subject in all, except in Case XI., in which instance the supply was from the husband. The quantity of blood injected is known to be closely approximate, though not exactly measured. The instrument used is a special one, essentially a "Higginson's Syringe" reversed, and a funnel added to receive the blood. A diagram and description of it is The objects aimed at in its construction are to avoid injection of air, to keep the blood at an even temperature, and always moving onwards. An average of 9oz. in each case before coagulation occurred shows a sufficient capability of practical utility with pure blood. Still, the experiments with defibrinised blood, or with solutions added to it, may be ultimately of value in practice.

The accompanying diagram almost explains itself. To use it, immerse it for a few moments in a large basin of warm water at 100°, remove the screw C till the cavity B is full of water, then close the opening again. Fill the elastic tube G with water, and close the opening K with the plug I; handle the tube gently, and keep it horizontal while inserting the terminal pipe O into the patient's vein. Bleed the supply into the cup A, and temporarily place the plug H in the pipe F; holding the elastic barrel E in a light grasp of hand, expel the air, and draw in the blood through D. When this is done, and the cup nearly full of blood, the plug H has to be removed, also plug I, and the pipe F inserted into the opening K. M is a small stud to receive the ring L, and make the coupling secure. At first the blood may flow freely, by



MR. HIGGINSON'S TRANSFUSION INSTRUMENT.

(Diagram, half the actual size.)

A, metal cup (6 oz.) to receive blood. C, opening to admit warm water (5 oz.) to the space B. E, elastic barrel to receive blood from D, and expel it through F. Ball-valves allow it to pass only in the enward direction. G, elastic tube, with metal pipe O, for the vein, and mode of junction at K, with the apparatus.

gravitation only, into the patient's vein, but soon a little impulse is required by pressure on the barrel of the instrument. The ball-valve at D is not thrown upward by air escaping from the barrel, but rises with the blood, and prevents its escape into the cup. Nevertheless, it is not advisable to let the blood sink so low in the cup as to draw air into the barrel. The lower ball at F might, perhaps, be left out altogether, the more particularly as coagulation is apt to begin at that part. The whole instrument unscrews for cleaning, and the ball valves must be looked for in the coagulated blood.

Should the operation be impeded by coagulation before a sufficient quantity of blood has been received by the patient, it is easy to supplement it sometimes with a syringe and teacup, if the supply is still good, and a syringe ready, the nozzle, when perfectly full, being carefully inserted at K.

It is well that the operator should have two competent assistants, one to restrain the patient's arm, and keep the pipe secure, the other to keep a good supply of blood flowing into the cup, while the operator looks to its passage through the instrument. It facilitates the placing of the pipe in the vein, to put a probe or a large pin underneath it before opening the vessel, which may often be so small and contracted as to endanger its transfixion, and the passage of the pipe into the cellular membrane beneath.

In conclusion, it is the writer's strong hope that competent operators will take up this important operation, study the best modes of performing it, and ever hold themselves in readiness for the duty of saving life by its means, when called to rich or poor.

NOTES OF A CASE OF POISONING BY CARBOLIC ACID.

BY GEORGE A. WOODS. L.R.C.P., M.R.C.S.
HONORARY SURGEON, SOUTHFORT CONVALESCENT HOSPITAL, AND LOCAL IMPIRMARY
AND DISPENSARY.

Emily L., et. 16 years, servant. On Monday, August 28th. 1871, about 6.30 a.m., owing to some quarrel with her lover. swallowed, with the intention of committing suicide, fifteen drachms of Calvert's No. 5 solution of carbolic acid.* She tried two or three times (about five minutes after having taken the poison) to ascend a ladder leading to her bedroom; at last she succeeded, and upon reaching her bedroom she walked across a landing to her master's bedroom, where she appeared about ten minutes to seven (twenty minutes after having taken the poison). She seemed wild, and partly unconscious, as though she had taken a large quantity of alcohol. She sat on the edge of her master's bed for about three minutes, and then suddenly fell down on the floor perfectly insensible. He removed her to her own bedroom, and sent for me. I arrived at ten minutes past seven (just forty minutes after she had taken the poison). I found the patient frothing at the mouth, perfectly insensible, skin cold, pupils natural, arms uplifted, and with severe convulsive twitchings of both legs. Pulse 130. She had never vomited. By means of the stomach pump, I injected a large quantity of tepid water and chalk. Vomiting was produced, the vomited matters smelling very strongly of carbolic acid. She gradually became conscious, and complained of "pain all over her," more especially in the throat and stomach.

^{*} Messrs. Calvert & Co. state that "our No. 5 carbolic acid is composed of about 85 per cent. of carbolic and cresylic acids and their homologues. These acids are identical in their properties, but boil at different temperatures."

9.15 a.m.—Seems better; more conscious; great inclination to sleep—in fact, can hardly keep awake. Pulse 180. Ordered gruel, with plenty of salad oil.

10.15 a.m.—Has been sick four times; quite conscious. questioning her, she stated that she took the carbolic acid at 6.30 a.m., before breakfast time; felt "as if her inside was burnt out;" tried to drink some cold water, but found she could not swallow. About five minutes after having taken the poison, she felt very sleepy. Her legs felt as if they had "gone to sleep," numb, and no use in them, and afterwards as if they had been galvanised. She does not remember going into her master's room. that she drank the carbolic acid from the bottle mouth. I found the bottle of carbolic acid, and showed it to her. She told me the carbolic acid (and her master bore out the assertion) reached to the top of the fluting in the bottle. I carefully marked where the liquid reached in the bottle; poured the carbolic acid out, and filled the bottle with water; poured the water out as far as the mark, and measured. I found she had swallowed fifteen drachms of the solution of carbolic acid. She confessed to have swallowed it near the kitchen dresser, and none being found there, and none on the clothes, and judging from the severity of the symptoms, I am firmly of opinion that she swallowed the amount already stated.

1.30 p.m.—Says she feels better. Pulse 120. Complains of pain in throat and stomach. Mouth and throat excoriated. The lining membrane, and surface of tongue white, as if smeared over with caustic.

7.50 p.m.—Passed water for the first time since she took the poison. Sp. gravity 1010; acid. Very smoky, and containing mucus. No trace of blood corpuscles: no peculiar odour; nearly two pints in quantity. Ordered a dose of castor oil.

August 29.—9.15 a.m.—Pulse 100. Feels better; has passed water twice during the night, much clearer.

2.30 p.m.—Pulse 88. Complains of more pain in the throat and stomach; cannot drink anything warm. Has slept very much during the day. Bowels not yet opened. Ordered another dose of castor oil.

9.30 p.m.—Still feels better; slept well. No action of the bowels.

August 30th.—Pain in the stomach easier, but more in the throat, mouth, and gullet. Pulse 88. I have given her nothing except gruel, with plenty of salad oil.

August 31st.—Still improving; no pain in the stomach; still complains of pain in the throat and mouth. Pulse 88. No action of the bowels.

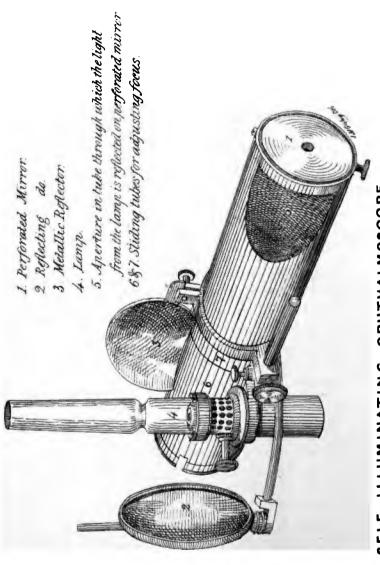
There seems not to be the slightest doubt but that the patient will eventually recover, although naturally convalescence will be tardy. I have not noted the case further, otherwise it would not have been in time for publication. Although it is generally recommended that the stomach pump ought not to be used in this class of poisons, still, when one considers that the patient was quite unconscious, not able to swallow, had never vomited, and from her general appearance, was rapidly sinking, I am of opinion that I adopted the right course of treatment, which, I hope, will eventually be proved.

In conclusion, I think that carbolic acid ought, when sold, to be labelled "Poison," as the majority of cases of poisoning from it have been accidental.

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SELF ILLUMINATING OPHTHALMOSCOPE.

DESCRIPTION OF A SELF-ILLUMINATING OPHTHALMOSCOPE.

BY T. R. GLYNN, M.B.
PHYSICIAN TO THE LIVERPOOL MOBTHERN HOSPITAL.

The accompanying is a sketch of an Ophthalmoscope designed by me to facilitate the examination of the retinæ of patients when in bed, and to render their removal into a darkened room unnecessary.

Since the year 1868, I have used this instrument very frequently for examining the eyes of children and adults, suffering from cerebral and other diseases, and necessarily confined to bed. The illumination of the retinæ is not so intense, by means of this instrument, as it is by the instrument Dr. Beale has recently invented, much light being lost in reflection and in transit, but I find quite sufficient light reaches the fundus of the eye to render its examination easy and complete even in a bright room.

I need say little concerning the construction of the instrument, as it may readily be understood by a glance at the drawing.

The Ophthalmoscopic mirror is concave, with a focus of twelve inches, it swings on pivots (one of which may be screwed so as to fix it in any position), at the end of a light brass tube six inches in length.

On one side of this tube and close to this mirror is an aperture for the passage of the light from the reflector.

In this tube slides another, and at the further extremity of this is the convex lens (two inch focus).

Over this a shorter tube moves, and to its free extremity is adapted a pad to enable the instrument to rest easily against the brow and cheek. By this combination of tubes the focus is easily adjusted.

The reflecting mirror has a focus of four inches. It is held by a

114 DESCRIPTION OF A SELF-ILLUMINATING OPHTHALMOSCOPE.

very simple mechanical arrangement at a suitable distance from the lamp, and placed at a proper angle. It is at such a distance from the perforated mirror that the rays of light reflected by it may cross and become divergent, and illuminate the entire surface of that mirror.

The lamp is one of Young's small, argand camphine lamps with a smaller reservoir adapted. It is fixed in a convenient position against the lower end of the tube holding the perforated mirror.

The instrument readily takes to pieces so that it may more conveniently be carried.

It has been made for me by Messrs. Chadburn, of Liverpool.

SHORT NOTES ON DRUGS AND PHARMACEUTICAL PREPARATIONS OF RECENT INTRODUCTION.

By JOHN ABRAHAM, PRESIDENT OF THE CHEMISTS' ASSOCIATION.

The most noted medicine of recent introduction is Chloral Hydrate. Its use originating in Germany, its manufacture has been almost, I should perhaps say entirely, confined to that country. The exaggerated expectations with which it was heralded have not been realised, and its consumption, so far as my experience enables me to judge, is not nearly so extensive as it was formerly: but I suppose there is no doubt that it will prove a valuable agent. It has been stated that an Alcoholate has been fraudulently substituted for the Hydrate, and that its properties are very different, and very inferior. The two are distinguished by the relative amounts of chloroform which they are capable of yielding, which is considerably less in the case of the alcoholate. An alarm was excited which has been shown to be unfounded so far as it relates to this particular substitution, and it rather appears that the quality of the chloral hydrate in the market in this country was remarkably uniform, differing mainly in the presence of a little more or less water, owing to its being somewhat hygroscopic. It has been suggested, however, that there may be present occasionally some unknown compounds of chlorine, which alter its properties, but I believe that none such have yet been detected. It may be observed that according to the experience of some observers, a very minute quantity of impurity may be expected to modify its action. This may be illustrated by the fact that there are in the market two chloroforms, one made from rectified spirit, the other from the mixture of rectified spirit with naphtha known as methylated spirit. I am not sure that it is possible by any ordinary

means to distinguish between them, and I was told by one of the most eminent manufacturers that they could not distinguish one from the other. But I am assured that the use for anæsthetic purposes of the one made from impure spirit is more liable to be followed by sickness than the similar use of the other.

The general use of *Phosphates* and *Hypophosphites* is a noticeable feature of the Pharmacy of the last ten years. Hypophosphites in solution in water pass into Phosphates, and I doubt whether their preparation in the form of syrup preserves them.

Hypophosphite of Lime is stable and may be administered as a powder, but it is not soluble in water.

Hypophosphite of Soda is soluble, but should not be kept more than a few days in solution. The Hypophosphites have not realised the sanguine expectations of their early advocates.

The *Phosphates* and *Syrups* of Phosphates have come largely into use, but all or most of the latter decompose in keeping. The Syrup of *Phosphate of Iron* of the Pharmacopæia is much in use. A syrup of *Iron*, *Quinine*, and *Strychnine* (also called Professor Easton's Tonic Syrup) is a favourite. It contains Phosphate of Iron, with one grain Phosph. Quinine, and $\frac{1}{3}$ grain of Strychnine in each drachm, which forms a dose.

A compound Syrup of Phosphates known as Parrish's Compound Syrup of Phosphates, and Chemical Food, is imported from the United States. It contains in one drachm about two-and-a-half grains Phosphate of Lime, one grain Phosphate of Iron, with smaller quantities of Soda and Potassa.

To the Syrup of Phosphate of Iron is sometimes added *Phosphate* of Manganese, half a grain to a drachm.

A feature of recent pharmacy is the use of Granulated Effervescing preparations. One of these has become wonderfully popular within a short time. It is known by the name of Effervescing Citrate of Magnesia, although it does not usually contain any magnesia. The type of this preparation is the Sodæ Citro-Tartras Effervescens of the Pharmcopæia, which is a very elegant preparation. Some of the manufacturers of the popular preparation add sugar, and, I think, a larger proportion of acid, and obtain even a more palatable preparation. The same ingredients are also combined with a number of active medicines of which those known as Effervescent Carbonate of Iron and Effervescent Carbonate of Lithia are the chief. Effervescent Citrate of Quinine, Citrate of Quinine and Iron, Citrate of Bismuth and Pepsine, Bismuth, Pepsine and Steel, Vichy Salt, Citrate of Potash, &c., &c., are also in use. With regard to these preparations, it should not, however, be assumed that the patient really takes Carbonate of Iron, Carbonate of Lithia, &c. The effervescence is produced by the reaction of Tartaric and Citric Acids on Bicarbonate of Soda; but in the presence of these acids, it is not to be expected that the liberated Carbonic Gas should seize the Iron, Lithia, &c. The fact in question will be still more apparent when an attempt is made to produce an Effervescent Iodide of Iron.

The waters of various natural springs have come into large demand. The chief of these are the Vichy, the Friedrichshall, and the Vals, of the foreign springs, and the Harrogate of our own country. The latter are divided into the Sulphureous and the Chalybeate, and the usual taste of iron solutions is completely masked in the latter by the introduction of carbonic acid. Of the other springs, those I find chiefly asked for are the Pullna, the Carlsbad, and the Kreuznach. The latter is concentrated into a solution, and also into a salt which is used in baths.

Of dietetic articles I may name the Extracts of Meat and Sugar of Milk. The former as a food for invalids, the latter for children, is largely consumed.

In connection with these may be mentioned Pepsine, Pepsina Porci, Wine of Pepsine, and Liq. Pepticus. Præp., Pepsine and Pepsina Porci are names used to signify an active principle combined in an uncertain proportion with starch. Both are in considerable favour.

The Oil of Theobroma (Cacao butter) has been a valuable addition to pharmacy, especially for the exhibition of medicines by the rectum and vagina. Applications of this nature, which were almost unknown, as respects the latter organ, twenty or thirty years ago, are now greatly in demand, and the oil of theobroma is the medium generally preferred, on account of its firmness when cold, and its low melting point. But a mixture of gelatine, glycerine,

and water, forming a soft elastic body, easily soluble in mucous secretions at the temperature of the body, is sometimes used, and, I think, will be found deserving of notice. The introduction of carbolic acid, pure, impure, and compounded, is a noticeable feature, the particulars of which are well known. The Sulpho-Carbolates of Zinc, Soda, and Potash are used. The use of the articles called Marine Lint, Tenax, and Carbolised Tow, may be mentioned in this connection.

Bromide of potassium is in large demand, although chloral hydrate seemed on its introduction to be tried as a substitute. The Bromides of Ammonium, Iron, Quinine, and Sodium are also in use. Acetate of Iron in solution has a very agreeable taste. The officinal tincture is not found to keep, but the Ethereal Tincture of Acetate of Iron, of the German Pharmacopæia, is a good preparation. The dose is twenty minims. Rubini's Tincture of Camphor is in popular demand. It is a strong spirit of camphor made by dissolving camphor in its own weight of alcohol (not spirits of wine).

Sulphurous Acid, after having been much over-praised, is still in moderate demand. It varies much in strength, and is liable to change. A solution of Bisulphite of Lime, in which the sulphurous acid is loosely combined, which was introduced for the preservation of meat for food, has valuable applications corresponding to those of sulphurous acid. The Sulphites and Bisulphites of Soda are analagous preparations, but they do not smell of sulphurous acid. A mixture of chloride of sodium and oxide of manganese, to which is added a dilute sulphuric acid, is used for the production of Chlorine Funigation where a large quantity is wanted in an unoccupied apartment. Hydrochloric acid is added to oxide of manganese where a slower development is required, but this may be hastened by the application of heat.

Oxalate of Cerium continues to be prescribed, and (largely) Carbonate of Lithia. The Resin of Podophyllum is in established demand.

A preparation called Vin Diuretique d'Hotel Dieu is in use. It is composed of Squill, Juniper Berries, Digitalis, and Acetate of Potash, infused in white wine. The dose is half-an-ounce.

I conclude these notes with the names of a few other medicines, more or less recent, which are in occasional demand:—

Alumen Ferricum.

Ammoniæ Benzoas.

Valerianas.

Phosphas.

Ammonii Iodidum.

Amyl Nitrate.

Cinchoniæ Murias.

Codeia.

Ferri Phosphas.

Ferri Valerianas.

Furfurine and its Nitrate.

Glycerinum Acidi Carbolici, Acidi Tannici, &c.

Hydrogen Peroxide.

Iodoform.

Liq. Bism. et Ammon. Cit.

Liq. Potas. Permang. (Instead of Condy's Fluid).

Manganese Peroxide (pure); dose, five to ten grs.

Methylene Bichloride (for inhalation).

Ol. Cadii (Huile de Cade, Empyreumatic Oil of Juniper).

Ol. Pini Sylvestris (for inhalation).

Potassæ Citras.

Pruni Virginiani Cortex (the infusion is the usual form of administration).

Sodæ Citras.

Sodæ Hyposulphis.

Sulphuris Hypochloridum (a powder resembling sulphur sublimatum, composed of sulphur, with an uncertain proportion of chlorine in loose combination).

Triticum Repens.

Zinci Benzoas.

. Valerianas.

120 TABULAR VIEW OF THE MAJOR OPERATIONS PERFORMED IN ' LIVERPOOL, DUI

							BOYAL INFIRMARY.		NORTHERN HOSPITAL		Hospi
							Record.	Died.	Record.	Died.	Record.
Excision o	f the shoulder join	nt		••	••		1		••	••	
	elbow joint	{ prima	ry lary	••	••	::		1† 	ï		::
	wrist joint	••	••		••		1				
•	ankle joint (secondar	у)	••		••	1			ļ	1
*	hip joint	••		••	••		1	1*			
,,	knee joint {	primary seconda	ry	::	::		•••	::	1	::	
	upper jaw		••	••	••	••	1				
*	lower jaw	••	••	••	••		1		1		
Amputatio	on through the she	oulder jo	int (p	rim ary)	••	••				1†	1
W	of the arm $\left\{ \begin{array}{ll} \mathbf{p} \\ \mathbf{s} \end{array} \right\}$	rimary condary	ior d	 lisease)	::	::	8	1†	::	::	1
•	" forearm	primary seconda	r y	••	::	••	8 2	1•	25	j .	2
,,	" hand (pri	mary)	••	••		••					1
,,		rimary condary	{ for	disease injury	::	••	10 1	2¶- 4+++ 1+		2°	i
	through the kno	9 0	••	••	••	••	1			1†	
•	OT MIG IGHT 4 -	nary ondary	for d	isease njury	::	::	1 8 1	2††9 1†	3 1 2	::	.:
•	" foot { p	rimary scondary	::	::	::		2		1	::	::
	. penis	••					1				
	" cervix u	teri	••	••			1				

Died of Smallpox.

[•] Died from Exhaustion. + Died from Pycemia.

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INFIRMARY, NORTHERN, AND SOUTHERN HOSPITALS IN LAR, 1870.

							Royal Infirmaby.		NORTHERN Hospital.		SOUTHERN HOSPITAL.	
			 _				Record.	Died.	Record.	Died.	Record.	Died.
of the	whole ton	gue					2	••				
n for ununited fracture of forearm							••			1		
y (lat	eral) .						3		1		2	
of the	e carotid a	rtery (for	aneuris	m)								1
•	femoral	,,	*				8			11		
my			••			••	2	4	2	1	1	1
Secti	ion .		••	••	••		2	1•				1
esis tl	horacis .		••		••							1
10			••	••	••	••			1			
omy	for diseas	е)		••			1		1			8
ing					••		1				2	2
ion of	mamma .		••	•••	••		5	1†	1			1
	eyeball .		••				1				1	
	tumours	••	••	••	••	••	14		1	1		
oraphy	у				••	••	2					
perat	ion, for ca	ncrum ori	s		••				1		••	
	ru	ptured pe	rineum		••		2					
extroversion of bladder					1							
l of diseased bone					••	7		2		4		
lo	oose cartils	ges from	knee	••	••		2					
ision	of disease	d ganglia					1					

s a Double Primary Amputation. ¶ One of these died from Secondary Homorrhage.

ABSTRACT OF THE PROCEEDINGS OF THE LIVER-POOL MEDICAL INSTITUTION.—SESSION 1870-71.

PAPER I.

On the Non-registration of Still-born Infants. By F. W. Lowndes, M.R.C.S. Eng.

The author began his remarks by referring to the prominent manner in which the subject of infant mortality had been lately brought before the public in its various phases of baby-farming, child murder, &c., and considered that our registration laws were. in a great measure, to blame for the indifference shown to infant life, by making no provision for the registration or recognition of still-born infants. The registration of births and deaths commenced in 1837, prior to which time the only record of births was such as could be obtained in the register of baptisms—a column being generally left for the date of birth. When it is borne in mind how large a number of persons are not baptised till they have reached adult age, and how many are not baptised at all, it is obvious the record of births must have been very inaccurate. In 1837, an Act was passed regulating the registering of births and deaths. The author showed that, elaborate as the rules of this Act were, there was still one serious defect, viz., that no account whatever was taken of still-born children. The instructions issued to the Registrars are as follow:--"Still-born children must not be entered either in the register of births or of deaths; but, if a child is born alive, although it dies immediately after birth, both the birth and the death must be registered separately in the proper form." If any alteration is to be made in the existing law, it must be for better reasons than mere curiosity, or even the accumulation of what might prove valuable scientific material. Mr. L's attention was drawn to the subject by observing the varieties of practice in different parts of the country. One surgeon, for

instance, informed him that although the child might be born alive, yet if it lived only for a very short time, he frequently gave the parents a certificate of still-birth, when they were very poor, in order to save the extra expense to which they would otherwise be put. He admitted that this was both irregular and improper, but excused himself on the ground that it saved poor people expense, and could do no harm. The author's experience—as formerly an assistant to three different practitioners, as Resident-Surgeon to the Birmingham Lying-in Hospital, and as Assistant-Surgeon to the Ladies' Charity here—and his opportunities for observing the various regulations that are adopted in different places to meet the deficiency in the Registration Act, have been considerable. Sometimes in a genuine case of still birth he was asked for a certificate, in other instances he was not asked, and on volunteering to give one, was informed that it was unnecessary, as the child could be buried without one. One gentleman, whom the author once assisted, made it a rule to give no certificate of still-births; and during one twelvemonth at least six cases of still-births occurred under the author's observation, where the children were all interred in the various churchyards without any certificate or enquiry whatever. This state of things has not existed without already calling for remark. In All Saints' Cemetery, Newcastle, five hundred and twenty-one interments of still-born children occurred within seven years; and their non-registration was mentioned by the Registrar of Newcastle as a matter of regret. Again, in the Lancet for July 13th, 1869, occurs an important article on this subject.

Mr. Lowndes here gave a number of statistics bearing upon the point, among which he found that the proportion of still-births to the total number of births varies from 3.29 per cent. in Prussia to as low as 0.80 in Russia, and it appeared to be a general rule that the higher we ascend in the scale of civilisation, the greater is the number of still-births. Dr. Ballard even makes the ratio as high as 5 per cent. in European countries; and in New York it is as much as seventeen and eighteen per cent. In an article on Baby-killing, in the British and Foreign Medico-Chirurgical Review, after strongly advocating the registration of still-births,

Dr. Ballard remarks:-" Human nature is much the same everywhere, and where there is no fear of detection, the temptation to a criminal neglect of those precautions which the accoucheur takes to preserve the life of the child during the act of parturition is probably too strong to be resisted in many cases where opposing motives have little cause for existence." Dr. Lankester states that out of one hundred and thirty-six inquests held on the bodies of infants, in one hundred and nineteen a verdict of still-born was found, and he believes there is as good reason for supposing that their lives were sacrificed, as there is of those who breathed after they came into the world. Dr. Lankester based this opinion on the fact that these children were found with the cord untied, and with other signs of the neglect of any attendance upon mother during her delivery; moreover, they were found deposited in gardens, lanes, and quiet places under the same circumstances as live-born children.

Mr. Lowndes next showed how suspended animation, being a very common occurrence in the newly-born infant, may very easily be allowed to pass into death, where only shame can occur from the child being permitted to live; and he quoted some very extraordinary revelations by Mrs. Meredith, detailed to the Social Science Congress, which showed that women prisoners were thoroughly acquainted with the art of child-murder, and had in many instances quite a contempt for infant life. The older prisoners teach the younger ones, and they consider it quite a mean thing to be found out.

In Scotland, the undertakers are required to furnish a report of every person buried by them within three days after the funeral; but Mr. L. found that in the case of still-born children no such report was required; and on enquiry at Somerset House, he discovered that no penalty was incurred even by persons who gave a false certificate of still-birth. By personal inquiry, Mr. L. learned that in all cases of still-birth a certificate from a doctor or a midwife is required by the cemetery authorities. The fee for interring a still-born child is, in all cemeteries, less than for one that has lived—the difference being from 1s. 6d. to 7s. 6d. This is, of course, a great inducement to fraud.

A table, showing the number of interments annually, was added, and the author stated that the officials at the various cemeteries which he had visited, expressed, without exception, the opinion that the present arrangements were very unsatisfactory. them, indeed, stated that persons burying still-born children insisted on seeing them buried with their own eyes at once, or else carried them straight away to another cemetery; for which indecent haste no good motive can be suggested. Mr. Blake, the Coroner's beadle, having been appointed to examine a Liverpool mortuary daily, has detected many cases of children two or three days old being brought there as still-born, and he has been the means of discovering several examples of foul play. As to the check imposed on parents by a certificate from the person who delivered the child being required, this, no doubt, is very well in cases where qualified medical men are present; but among the poor it is almost entirely midwives who officiate at confinements, and upon their integrity little reliance can be placed, while their ignorance is often amusingly manifested in the certificates they give.

PAPER II.

On the Employment of the Sphygmograph in Determining the Action of Remedies.

By Wm. CARTER, M. B., LOND.

After some introductory remarks on the variations observable under different conditions in the line of ascent, the apex, and the line of descent of the sphygmographic curves, and the conclusions that were capable of being fairly drawn from such variations, the author explained that in all the cases he should have to adduce, the sphygmograph had been applied to the same (left) radial artery, and that two tracings were always made as closely as possible to each other on the same glass—the one before, and the other after the application of the remedy—so as to admit of a ready comparison. The agents employed were—the warm bath, alcohol, nitrite of amyl, ipecacuanha (to produce emesis), digitalis, aconite, chloral hydrate, belladonna, and veratrum viride.

The Warm Bath.—The entire body was immersed in a bath at

98° F., and the tracing taken almost immediately afterwards. A very striking change, affecting chiefly the apex and line of descent of the sphygmographic tracing, was observable. Before the bath the apex was much rounded, so rounded, indeed, that an almost horizontal line of some length connected the lines of ascent and descent, while the latter was nearly mathematically straight—the merest ripple occurring near its commencement. after entering the bath, the apex became exceedingly sharp, the ascending and descending lines forming an angle of considerable acuteness, often not more than 45°, while the angle formed by the extension of the corresponding lines upwards under ordinary circumstances, was never of less value than 90°. Besides this alteration of the apex, the line of descent, instead of being straight, was broken by a deep notch, indicative of increased dicrotism. These alterations seemed to point to the following physiological effects of the warm bath, viz., a diminished resistance to the passage of the blood through the swollen arteries and capillaries without any great diminution of the force of the systole. The ascending line on the tracing was as high during the bath as before, showing that the force with which the left ventricle acted was, therefore, not much, if at all, diminished. The instantaneous descent of the lever on the conclusion of its ascent, and the obliteration of the previously existing horizontal line between its rise and fall, point clearly to the disappearance of a state of tension in the small arteries and capillaries which exactly balanced the force exerted in the latter part of the systole. The secondary curve indicated also diminished resistance.

Alcohol—in the form of whisky-punch (one ounce of Irish whisky to two ounces of hot water)—produced a vertical line of ascent as the chief variation from the normal tracing. The left ventricle, therefore, under the stimulating influence of alcohol, acts quickly as well as strongly. There was no indication of diminished tension in the arterial system.

Nitrite of Amyl—was administered by inhalation, five drops having been placed on a cone of blotting paper, which was held over the nose and mouth during inspiration. Flushing of the face, and a sense of fulness in the head immediately supervened,

and concomitantly with these effects there were the following changes in the tracings :—A much greater number of pulsations in a given time, the proportion being as nine to five; a short, but oblique line of ascent; a rounded and an unbroken line of descent. From these indications it was concluded that the physiological effects of the drug, such as the sense of fulness, &c., depended probably upon an exactly opposite condition to that which was often stated to cause them; and that instead of capillary paralysis, and a consequent free passage of blood through the system, there was an undue amount of resistance, which, coupled with a very rapid and somewhat vigorous systole, kept the capillary system in a constant state of tension. It was remarked that the mere fact of increased frequency of the pulsations could not alone account for the entire absence of a secondary curve in the line of descent if there had been a condition of capillary paralysis; because, in the pulse of typhus, in which this prevails, such a curve is always well pronounced, however rapidly the heart may act.

From the appearance of the tracings during the administration of Digitalis, Dr. Carter was inclined to the opinion that this drug acted as a cardiac tonic; but he would not speak decidedly on this point till he had made further observations.

In the other tracings there was not sufficient change to call for special remark.

PAPER III.

On the use of Tobacco in Ileus.
By James Vose, M.D.

The author regretted that writers of such eminence as Pemberton and Bright had omitted—the one in his work on various diseases of the abdominal viscera, and the other in his Gulstonian lectures, "On the Functions, &c., of the Abdomen,"—to treat of such an important disease as ileus. We are indebted mainly to Abercrombie for the earliest successful attempt to discuss the subject of ileus in a broad and scientific spirit. In the absence of strangulated external hernia and of stricture of the large intestine within reach of the surgeon's finger or instruments, the diagnosis is for the most part more or less conjectural. Hence, the most

sagacious and experienced physician may be at fault as to whether a case be one of "simple ileus," to use the language of authors, or of ileus "with previous disease of such a nature as seemed to act by deranging the muscular power of the canal without mechanical obstruction," or of ileus "with mechanical obstruction or other organic changes in the structure of the parts." Inasmuch, therefore, as our perplexity arises from the enquiry having to be directed to a condition of viscera removed from sight, it is our duty to persevere with judicious treatment to the last, and here, if anywhere, we should give a patient the benefit of our doubts, and never discontinue efforts for his relief—remembering that in ileus, as in fever, recovery is known to occur even at the eleventh hour, when friends are in despair, and regard further interference as the mere pedantry of art.

The author narrated three cases illustrative of the success following the treatment he advocated. A lady—at the seventh month of her first pregnancy, and who had been for some time disturbed by uneasy sensations in the region of the ascending colon, which could not be accounted for-became affected with nausea, vomiting, and obstinate constipation; in short, with unmistakable symptoms of ileus. All the usual means were diligently applied for her relief, but they proved unavailing. After much anxious deliberation, in consequence of her condition, it was decided that a supreme effort should be made to save her life, and that, although she was pregnant, tobacco should be had recourse to. Accordingly, the enema was employed repeatedly, and with every possible precaution. Again and again the patient was brought under the physiological influence of the remedy as indicated by the occurrence of palor, giddiness, and faintness. At last the bowels began to act, the vomiting ceased, and she recovered completely—utero gestation going on to the full term, and the child being born alive.

The next case was as follows:—An elderly man, a free-liver, became the subject of ileus. A variety of remedies were tried, but without effect; very large doses of calomel were next exhibited, and with the same result. It was then decided to use tobacco injections. This was done, and repeated, but unavailingly.

Lastly, tobacco was applied to the external surface of the abdomen in the form of cataplasm. Happily this succeeded, and the patient made a satisfactory recovery.

The following are the particulars of the third case. On the 11th of last month, Dr. V. saw a young lady, aged fourteen, who had been indisposed since the 5th. The patient was considered to be suffering from peritonitis, but he did not feel satisfied of this. Upon being summoned again, three days later, he expressed a fear that the symptoms were referrible to ileus, and that proved to be too true. Frequent pulse, vomiting, tumid, doughy abdomen, and constipation were present. Simple enemata, mild aperients, fomentations, and opium, to the extent of eight grains in combination with six minims of croton oil, in divided doses at intervals were tried, but without success. Tobacco cataplasms were next applied, and with a like result. Three injections of fifteen, twenty, and twenty-five grains of tobacco, infused for ten minutes in six ounces of boiling water, being thereafter administered, complete relief was obtained, the injections being followed by alvine discharges, and by a rapid diminution of the fever vomiting and abdominal fulness, the obstruction of the bowel having lasted altogether for about twelve days.

The two cases last cited furnish a good example of the waywardness and caprice of the animal economy in relation to the influence of remedial means, for, whereas, injections failed in the one, while cataplasms succeeded; cataplasms failed in the other, while injections succeeded.

That the tobacco treatment may be adopted with perfect safety, under proper precautions, is evinced by all the three cases, and emphatically by the first, where it was pursued in a patient at the seventh month of pregnancy, without causing miscarriage or any other untoward accident. These cases illustrate, not only an important fact in therapeutics; but, exhibit also the value of this powerful remedy, which is almost entirely ignored by the profession at present in its literature and in its practice.

As an example of this, Dr. Vose remarked that, the late Dr. Brinton, in an elaborate essay on Intestinal Obstruction, based on his Gulstonian Lectures, speaks hesitatingly of the virtue of

tobacco, rather damnifying by his faint and qualifying praise, than advancing its reputation by his advocacy. Mr. Cadge, surgeon to the Norfolk Hospital, in a memoir entitled "Cases of Intestinal Obstruction, with Remarks," published in the British Medical Journal, December, 1868, says, "of all the other methods of relief, as tobacco enemata, inflation, galvanism, cold affusion, crude mercury, &c., I say nothing, because I have nothing practically useful to say." But, having made such a confession, Mr. Cadge should surely have been on his guard not to catalogue an agent like tobacco with such therapeutic extravagances as inflation and Again, the late Dr. Tanner expresses himself in crude mercury. the following manner regarding this remedy:-"Inasmuch as I should never resort to the use of crude mercury in doses of one or two pounds, or of small shot, or of strong tobacco injections, these agents need not be noticed except to mention that they have each been recommended." Now, as Dr. Tanner's work enjoys considerable popularity, especially with medical students, it is dangerous, and, of course, reprehensible, of any author so placed, to express strong opinions, and in a contemptuous tone, upon important practical topics about which he either knows nothing, or to which he has given a merely perfunctory attention. Sir Benjamin Brodie, towards the close of his career, remarked that, "it must not be supposed that we have advanced alike in all departments of Surgery," and we may, perhaps, be permitted the liberty of extending his observation to the practice of physic.

In conclusion, the author contended that if a patient suffering from ileus be allowed to succumb without a fair trial of tobacco, the treatment has been incomplete, and a remedy has been withheld whose employment might have led to recovery. Like other medicines, tobacco must not be employed timidly nor rashly, but with prudent boldness, when it will prove to be always a safe, and often an invaluable remedy.

PAPER IV. On Relapsing Fever. By I. DE ZOUCHE, M.D.

This paper has been revised, extended, and carefully rewritten by the author, and it will be found in extense at p. 86.

PAPER V.

On the Cause of the High Death-rate in Liverpool. By John Newton, M.R.C.S. Eng.

The author pointed out in detail the many natural advantages possessed by Liverpool, not only over the great manufacturing and factory towns of England, as Manchester; but over most seaports, comparing it with Hull and London. Built on a series of hills, gently sloping towards the sea, where it forms a magnificent natural harbour, the site of Liverpool combines all the requisites for health as well as for business. It has been the constant theme of praise even from those who came to find fault. Thus, Dr. Lyon Playfair reporting in 1843 on the alleged causes of the excessive mortality in Liverpool, praises the beautiful situation of the town, its free exposure to the westerly wind, and the facilities which it offers for an effective system of drainage, and of cleansing. Moreover, Dr. Stallard is constrained to admit that it would be impossible to select a fairer or healthier site for the localisation of half a million of people than that of Liverpool.

Mr. Newton next gave extracts from Moss' Liverpool Guide Book (1801), written by an eminent surgeon of this town, and from various works of travel, to show that at that date, the deathrate of Liverpool was lower than that of London, and its inhabitants were noted for their healthy appearance. 1844 Liverpool was reported by Dr. Duncan as the most unhealthy city in the kingdom. Since that period immense sums have been expended, and great exertions have been made, by the Town Council and by the Select Vestry, to improve the public health. How costly these were, many of us know from our enormously increased taxation for sanitary purposes. The sewering of the town, and its water supply, are equal to those of any city in the Thousands of privies have been compulsorily changed into Committees and sub-committees have met and water-closets. reported, and what is the result? That the death-rate this year will probably be as high as that for any year since 1848; yet many causes which swell the death-rate in manufacturing towns (e.g., deleterious occupations, confinement in factories, &c.,) are

here entirely absent. There is, then, only one cause remaining, viz.:—the habits and character of the population.

The author then gave the results of his observations during nearly four years residence as Parish Surgeon in the greatest fever-centre of Liverpool. The greater portion of this district was filled to overflowing with poor Irish and their children, whilst hordes of new-comers were continually arriving by the steamers; and these at once repaired to this district and settled down in its streets in their unmitigated filth. A graphic description was given of their extreme uncleanliness, pauperism, drunkenness, unthriftiness, and savagery; of their habits of theft, lying, and beggary, their intolerance of the English, and their custom of waking the dead.

In these districts the Irish fever, i.e., typhus, is always present. It is also being constantly imported, as in 1847 and 1848, when three millions of Irish poor flocked into Liverpool within twelve months, and it became, as described by Dr. Duncan, a true city of the plague.

The fever and cholera districts, the pauper districts, and those of violent death were shown by Mr. Newton to be identical, and to be also those parts of Liverpool inhabited chiefly by the Irish. The Reports of Major Greig, and of the Rev. Jas. Nugent, with the Letters of Mr. Jas. Whitty, and of Bishop Goss, were quoted to prove that the workhouse, the parish schools, the fever sheds, the bridewell, and the borough gaol, were for the most part filled with Irish. Professor Jevons's recent address before the British Association, 1870, was also quoted. All the great towns having a high death-rate, Liverpool included, possess one thing, and only one thing, in common - and that is a large resident population of Liverpool, it is true, contains a great number of poor Irish. Scotch and Welsh emigrants—the latter, seventy years ago, being the chief foreign element; but both these classes of strangers are thrifty, sober, and law-loving, and they constitute but a small minority in comparison with the vast numbers of Irish who have overwhelmed the town since the establishment of steam-communication.

In conclusion, the author maintained that the unhealthiness of

Liverpool, otherwise so inexplicable, arises from one cause, and one only, viz.:—the existence in its midst of an enormous number of the emigrant Irish, who, with their children, are daily recruited by fresh hordes from Ireland—as ignorant, pauperised, lawless, and savage, as themselves, setting at defiance all sanitary regulations, and neutralising the best laid schemes for improving the health of the town.

PAPER VI. On Uterine Fibroids. By Thos. Skinner, M.D.

This paper has been revised, extended, and carefully rewritten by the author, and will be found at p. 1.

PAPER VII. On Male Chlorosis and Allied Diseases. By T. Inman, M. D.

The author's desire in this paper was to call attention to a group of diseases which have, in common, a peculiar condition of the blood, and generally, but not always, a waxy appearance of the skin. These complaints have received various names — chlorosis, leukœmia, purpura, scurvy, hæmorrhagic diathesis, and the like; but, although we have assigned cognomens to them, we are to a great extent ignorant of their true nature. Let us take chlorosis for an example. In that disease we find the blood deteriorating gradually in quality, the patient's strength diminishes, the discharge common to healthy women becomes scanty or ceases altogether; but there is no tendency to hæmorrhage, and, as a general rule, large doses of ferruginous tonics effect a cure in a short space of time. So common is this restoration to health with the use of strong chalybeates, that a very common formula was "Chlorosis is caused by a want of iron in the blood." This did not, however, explain why the globulin was originally diminished. and in what way the metal operated to increase it.

After noticing the fact that the extreme pallor, and many of the other symptoms characteristic of chlorosis were coincident with many gastric affections, especially with gastric ulcer—which, like

true chlorosis, attacks young women chiefly—Dr. Inman observed that between true chlorosis and such cases as the following, he could not see the smallest distinction. Mr. E., when about forty years old, began to find his health fail, his skin became white and waxy, his blood watery, his strength slowly declined, but there was no emaciation, and no discharge of blood, nor any excessive secretion. Pilgrimages to doctors and to various spas all proved useless, death ensued, the power of digestion remaining to the last. His body was, after death, carefully examined by Dr. Vose, Mr. Worthington, and Dr. I., yet no evidence of disease could be found; the lacteals of the mesentery were filled with chyle, the thoracic duct was large and pervious, and the heart was healthy. The only organ diseased was the blood, in which the globulin was so sparsely represented that the fluid barely tinged a white handkerchief. Here was chlorosis in the male.

The next case which came under Dr. Inman's observation was in a man originally powerfully built, and who retained his fleshiness to the last. In him the disease had come on slowly, but had advanced in spite of every remedy. When Dr. Inman saw him he had been ill for more than six months, and appeared to be a typical case of chlorosis. He was sallow and wax-like, very weak, without a stain upon the skin, and without any bleeding or inordinate discharge. His appetite was fair, and his digestion good. His urine was natural, and no disease could be detected except in the blood. In two days the man died, but no autopsy was More recently Dr. Inman had had under his care in the Royal Infirmary, a young woman, whose case seemed to be one of pure chlorosis, but where all forms of steel proved useless. Her urine, when examined, was found to contain albumen; but what the connection can be between a chlorotic-looking skin and renal disease, it is difficult to understand.

At the time this paper was written (Oct. 1870), the author had under his care a man about forty-five years old, whose symptoms were precisely those of a chlorotic girl; but, unlike the other cases narrated above, this patient had a tendency to bleed from the nose and bowels. The complaint came on very gradually and progressed, in spite of sea air, generous diet, cod liver oil, &c. About three

years before the present attack commenced, the patient was threatened with phthisis, but recovered perfectly. He improved for a while under the use of steel, friction of the body with turpentine and oil, and milk with brandy; but quite recently Dr. Inman had heard of his death from epistaxis. Another patient, of about the same age, suffered also from the symptoms of pure chlorosis. There was no bleeding or any discharge, but simply a steady sinking of the vital power without any emaciation or dropsy. Two years elapsed between the first indication of failing health, and dissolution, and during the whole of this time every hygienic and medicinal agent that could be thought of was successively but unsuccessfully used.

A short time ago Dr. Inman had in the Royal Infirmary a male patient, who, with the appearance of chlorosis, combined the hæmorrhagic diathesis. During the last two years he had been bleeding from the nose or mouth, or both. Few days have elapsed at any period without a discharge of blood. But the man, though pale, is not emaciated, and the only tangible complaint beyond that referred to, is a swelling situated above the right wrist, and which appears to be due to periostitis. He has not yet exhibited any purpuric spots. He left the hospital, after having been resident there about six weeks, without having derived any apparent benefit from treatment.

Another case was seen by Dr. Inman in one of Dr. Turnbull's wards, but in this instance, though there was no appearance of chlorosis, he suffered almost daily from hæmorrhage from the nose, or mouth, or bowel. Every inquiry made into the history of these cases failed to discover any adequate cause for the disease, and none of the patients were benefited by treatment.

One day Dr. Inman found in his wards in the Royal Infirmary, a young woman, who looked as if she had been the victim of frightful brutality. Her eyeballs were bloodshot, her eyebrows and eyelids livid and distended like a prizefighter's after a pugilistic encounter, her nose was swollen with effused blood, and her lips enormously enlarged, and apparently bursting with the quantity of clots below the surface. A stream of blood flowed from the angles of the orbit, from both nostrils, and from the mouth. Her urine

was more bloody than aqueous, and a quantity of gore came from the vagina and the bowels. Dr. Inman had never before seen such a sight. The girl stated that she had gone to bed perfectly well on the preceding night, and awoke next morning in the plight Up to that period her mode of living had been in every respect normal, nor could any cause be found for the phenomena. Within a few days another young woman was admitted into the Infirmary with analogous symptoms. The resemblance between these cases was as perfect as it possibly could be, in their symptoms, in the suddenness of their invasion, in the universality of the bleeding, and in the absence of anything to account for the attack. The former patient recovered in less than a month, and lost all trace of the disease in six weeks; the other, who was treated on the same plan, died before the end of a fortnight. In the families of neither of these patients was there any history of consumption, and this fact, so far as it goes, deserves to be noticed for this reason, viz.: that although there is no type of disease in which the hæmorrhagic diathesis is more common than it is in the phthisical, yet consumptive patients rarely exhibit such severe symptoms as those we have described, nor even the mildest form of purpura. Epistaxis occurs exceedingly frequently during the youth of those liable to tuberculosis, so also is menorrhagia common in females predisposed to phthisis. Homoptysis is a general harbinger of phthisis, and in cases such as these, a cut or wound shows no tendency to cease bleeding. Yet, with all this, nothing is more rare in phthisis than to meet with homaturia, or with a discharge of blood from the bowels. Again, there is perhaps no form of disease in which we find purpuric spots more commonly than in sea and occasionally in land scurvy; but, although in this complaint we have spongy gums and great debility, we rarely, if ever, find discharges of blood from any of the organs of the body The same remarks apply to albino-ism, the lead or melanosis cachexy, and Bright's disease. In many cases of ague the colour of the face has changed during the first rigor to a sallow, wax-like hue closely resembling chlorosis, and has been improved again by the first dose of quinine. The pallid colour attending enlargement of the spleen has often been noted by writers, and, as a natural consequence, this viscus has been supposed to be a blood producer. We may also notice here the peculiar bronzing of the skin sometimes, but not invariably, accompanying tubercular or other disease of the suprarenal capsules, which is unattended by a tendency to hemorrhage from the mucous surfaces.

Dr. Inman next referred to the excessive pallor often met with in acute rheumatism, making the patient look as white as well-bleached wax, also the sallowness attending the cancerous cachexia, and the whiteness accompanying long-continued small, or sudden and great, losses of blood. He inquired whether great pallor of the skin was by itself to be considered as a symptom of disease, and concluded that if unattended by debility it was not to be valued as such, instancing the pallor acquired by Europeans resident in India, and of persons who have been severely marked with small-pox.

What is that complaint, then, of which it is the visible sign? We have seen that it may indicate tuberculosis, struma, the cancerous cachexia, disease of the kidney or of the spleen, ague, excessive loss of blood, and the like. But if none of these are present what shall we say? Can we say that male chlorosis without loss of blood from any organ is identical with what by way of contrast we may call the hæmorrhagic diathesis? Are either or both allied to struma, to tuberculosis, or to any known disease? The only answer Dr. I. can find to these queries is that the evidence of which we are possessed points to the fact that male chlorosis or the analogous disease in elderly women is an affection sui generis, of which we at present know nothing excepting its symptoms, and that the diseased condition in which general bleeding takes place spontaneously is equally incomprehensible. So far as he is able to discover, this type of affections is not hereditary. They are not allied by family ties to any known disease, nor can they be traced to the use of any particular diet, or to the deprivation of any element of food. It is true that we frequently see alcohol-drinkers pale, but the patients he referred to were always temperate. Indeed, from his own experience, he should say that pallor of the skin is more common amongst women who dislike all alcoholic drinks and among men who eschew them wholly, than amongst the lovers of the glass.

After alluding to his not being able scientifically to determine the etiology and nature of the diseases treated of in this paper, and his inability to draw any inferences in an empirical manner, seeing that treatment had invariably failed, Dr. Inman compared these affections with such diseases as hepatic cirrhosis, regarding the origin and cure of which we know little or nothing. disease termed cirrhosis, the hepatic cells are diminished in absolute number, and the connective tissue seems to increase, and no one can understand either why the liver should contract, or what can be done to make it enlarge again. So it is with the blood in the cases of chlorosis we have been describing. The blood corpuscles diminish in quantity, and the connective tissue—in this case the liquor sanguinis-increases, and no one can explain why the former occurs, or what is to be done to prevent it. We have so long known that hob-nailed liver is an affection that is incurable, that we have ceased to feel shame at its being cited as a disease for which there is no remedy. There is, therefore, no reason why we should not consent to include in the same category the diseases we have been describing. We will not do so, however, until everything has been tried that science can suggest; and it is with the hope that others may be able to do so, or to propose some course of treatment beyond what has hitherto been tried, that he made these remarks.

PAPER VIII.

On the New Pathology of Tubercle. By Alex. Davidson, M.B.

The author commenced with some introductory remarks, contrasting the old doctrine promulgated by Laennec, with Niemeyer's new theory, and then proceeded to consider the new facts relating to tubercle and the arguments derived from them, which led to this change in opinion.

- 1. The facts and arguments derived from pathological anatomy.
- 2. Those drawn from experiments.
- 8. Some observations in general pathology bearing on the question.

Regarding, then, what the study of pathological anatomy in

recent times has taught us about tubercle. Dr. Davidson remarked that it had shown that cheesy matter does not constitute tubercle. This cheesy matter, which for a long time was considered as typically tubercular, has been found to be the result of the transformation of various pathological products, and not of tubercle alone. It might be merely inspissated pus—several examples of the contents of old abscesses, having become cheesy, had been exhibited to the society during the session. The so-called tubercle corpuscles are merely the shrivelled-up cells of the structure which has undergone this cheesy transformation—it may be tubercle, pus, or cancer—cheesy matter is not, therefore, necessarily tubercular. True tubercle often becomes cheesy, but not always. It may become fatty or calcareous.

In the next place, calcareous matter is not of necessity a result of tubercle. In the third place, scrofula is not tubercle. Scrofula and tubercle have been confounded with one another, partly because scrofula is liable to the same cheesy transformation, and so contains the same shrivelled-up corpuscles as tubercle. But Virchow has proved that while scrofula is hypertrophy of existing lymphatic glands arising from some neighbouring irritation, tubercle is a new growth, having the same histological structure as a lymphatic gland, but occurring where no gland previously existed. He classifies tubercle among the lymphomata, or tumours having the structure of a lymphatic gland. This essential character of tubercle is seen only in the early stage, when it is miliary, and before it has undergone the cheesy transformation. More recently, Dr. Burdon Sanderson has shown that this lymphoid, or as he terms it "adenoid," tissue exists normally in the parts most liable to tubercle, and that tubercle may be merely an hypertrophy of this previously existing tissue. The anatomy of tubercle being thus defined, the next point for consideration is how it originates.

Laennec's theory attributed the occurrence of tubercle to a diathetic condition of the system, which led to the spontaneous deposit of tubercle in the lungs and other organs. But recent experiments have thrown an entirely new light on the subject.

Experiments on the Inoculation of Tubercle.—A short historical

ABSTRACT OF THE PROCEEDINGS OF THE

account of this branch of the subject was next given. Villemin succeeded in producing tubercle in rabbits by inoculating them with tubercular matter obtained from the human lung, and he considered tuberculosis to be a zymotic disease. Dr. Davidson detailed some experiments he had made, which were of the same character as those of Villemin, and exhibited some preparations from the animals operated on. The researches of Drs. Wilson Fox and Burdon Sanderson appear, however, to disprove Villemin's theory. These observers found that, while the inoculation of tubercular matter was the most successful means of producing tubercle in animals, still that other means, such as the inoculation of putrid muscle, or even the irritation of a seton would produce the The general and microscopical characters of the same result. indurations resulting from such inoculations were then described. It was shown that both at the site of inoculation and in the internal organs, the indurations resulted from a growth of adenoid The viscera became, however, affected by some material being taken up from the site of inoculation by the vessels, and carried through the system. Various theories had been held regarding the nature of this material. Villemin supposed it was a specific poison, like that of smallpox; and, indeed, notwithstanding the experiments of Wilson Fox and Burdon Sanderson, this view, though rendered improbable, has not been absolutely disproved, seeing that in their experiments the air was not excluded. Cohnheim considers caseous pus to be the material, while Lebert thinks it is of a chemical nature. There is not yet sufficient evidence to determine this question.

From these experiments conclusions were drawn by Dr. Davidson with regard to the contagiousness of tubercle, and with regard to the cause of the different susceptibility of animals and of individuals to tubercle. The principal conclusion, however, was that tubercle in internal organs is a secondary affection, and that a primary source of irritation exists in the body.

Lastly, how does the general pathology of tubercle support these conclusions. In consequence of the length to which the paper had already reached, it was impossible to discuss this part of the subject fully. Reference was made shortly to Buhl's observations

regarding scute miliary tuberculosis, and to the views of Niemeyer, Waldenberg, and Burdon Sanderson on pulmonary phthisis.

The paper concluded with the observation that the real nature of tubercle was still undecided, and that further experiments, and more accurate clinical and pathological observations of tuberculosis were still required.

PAPER IX.

On Glaucoma, Primary and Secondary. By T. Shadford Walker, M.R.C.S.E.

Previously to the invention of the ophthalmoscope by Helmholtz, in 1851, the disease now known as glaucoma was only recognised as such when it had arrived at its last, and most complete stage, that namely, in which vision was so far affected that objects could only be seen dimly in one position of the eye-the general field of vision having become greatly contracted. Nothing beyond the perception of light still remained, the pupil was seen dilated and fixed, the iris reduced to a mere ring, its colour altered. and its fibres muddy and indistinct, the lens semi-opaque, and the area of the pupil showing a greenish reflection (from which the complaint obtained its name), and the eyeball itself, when touched, being of a stony hardness. Several observers, especially Weller, Lawrence, and MacKenzie, had noted and pointed out the importance of the increased tension of the globe; but the early stages of glaucoma were confounded with the symptoms of amaurosis, and passed under that name. Soon, however, after the ophthalmoscope allowed the interior of the eye to be examined, Prof. Jaeger, of Vienna, observed, and carefully described, the appearance of the optic disc in glaucoma, drawing special attention to the typical excavation, which, from the peculiar shading of the cup, was supposed to be an elevation instead of a depression. Descriptions of the ophthalmoscopic appearances, presented by isolated cases, were also published by other observers, and the increased tension of the eyeball in glaucoma was remarked upon; but it was not until the late Prof. Von. Graefe, of Berlin, combining the observations of others with his own, demonstrated the connection between increased globe tension and the excavation of

the optic disc (the true nature of which he was the first to discover), and the consequent pulsation of the central artery, that the real pathology of glaucoma was made clear. Von Graefe, moreover, reasoning from the success he had obtained by performing iridectomy in ulceration and progressive staphyloma of the cornea (which he explained by the relief of the tension undoubtedly produced in these cases) to the great probability of a similar result in glaucoma, at length, in 1856, had the satisfaction of announcing the complete success following iridectomy in all those cases of glaucoma where delay in resorting to it had not occasioned such alterations in the structure and nutrition of the retina and optic nerve as to render operative interference of any kind of no avail. He had thus the double glory of being the first adequately to recognise the essential character of a very serious disease, and to point out a most valuable remedy, the simplicity and good effect of which have been acknowledged by the foremost oculists of all nations.

Mr. Walker having remarked that glaucoma was chiefly a disease of advanced life, and that it resembled gout, phthisis, and other constitutional disorders, in the tendencies common to them of transmission from parent to offspring, gave a careful description of Acute Inflammatory Glaucoma. A premonitory stage was recognised, in which very mild and transitory attacks passed off without apparently doing the eye much damage, but eventually, these become very frequent, leaving intervals of only a few days: the sufferer began to pass restless nights, and found no relief in his symptoms on awakening in the morning; his sight became affected, and contraction of the field of vision was observed. Then, usually at night, and accompanied by violent neuralgic pain in the forehead, the attack suddenly came on which led to the title given to this form of glaucoma of Acute Inflammatory. Rapidly increasing dimness of vision, marked dilatation of the pupil, a narrowed muddy condition of the iris, more or less turbidity of the humours, and great increase in the tension of the eyeball soon follow, and are accompanied by great constitutional disturbance. One form, coming on suddenly, and actually destroying sight within a few hours, was noticed by Von Graefe, and termed by him "Glaucoms fulminaris." Fortunately, it is of extremely rare occurrence. A case of this kind, occurring in a working man who came to the Eye and Ear Infirmary, was described by Mr. Walker. This patient stated that two years previously, at bedtime, without any warning, the left eye was attacked; this was ushered in by excruciating pain, and in the morning vision was gone, not even a bright light held close to the eye being seen. In a similar manner, six weeks ago, the sight of the right eye had entirely disappeared within two days. No operation had been performed, and although he still suffered from attacks of dreadful pain in the eyes, he would not allow any operation to be performed.

The second variety of Primary Glaucoma, known as Chronic Inflammatory Glaucoma, was next described. It is distinguished from its predecessor mainly by having, instead of intermissions, remissions and exacerbations; rather than by the occurrence of fresh symptoms on a previously quiescent condition. Again, the cornea is much more affected in this variety; after a time it becomes flattened, and loses its sensibility to a remarkable extent, so that in many instances it may be touched or rubbed without producing any signs of distress.

A third variety exists under the name of Glaucoma Simplex, and is really only a very insidious form of the last; in which the inflammatory symptoms are masked, or are so slight and transitory, that the patient does not notice them. So quietly does the disease advance, that the sight of the one eye may be completely lost, while that of the other eye begins to fail in a similar manner, and, what was ascribed to a natural failure of sight, due to increasing years, is discovered to be disease requiring prompt measures to arrest its progress.

Having completed his sketch of the three varieties of primary glaucoma, the author made a few remarks on Secondary Glaucoma, which, as its name implies, consists of the grafting on a previous disease of the glaucomatous condition. Speaking generally, it may be said that those inflammatory diseases of the eye which, in their course, occasion an increase in the tension of the globe, and which, on subsiding, leave behind deposits of organised lymph, binding down and agglutinating the tissues, are very apt to occasion glaucoma.

In examining these classes of cases three modes of investigation must be pursued: -(1.) A careful enquiry is made into the history of the disease, and into the patient's symptoms. (2.) An ophthalmoscopic examination is made, and this, in a typical case, reveals the optic disc of a muddy, reddened, or yellowish tint, instead of showing a flat surface, being deeply excavated or cupped, the arteries smaller than natural, and exhibiting, either spontaneously or on very slight pressure, a distinctly visible pulsation, the retinal veins swollen or knotted, and very tortuous, the retina itself deprived of its transparency, becoming blurred, indistinct, and muddy, or being atrophied, and showing the choroidal pigment through its coats. (3.) Examination by the finger to determine the tension of the globe. In connection with this subject, the new ophthalmotonometer, invented by Professor Doe, of Berne, was described. It consists of a hollow ivory cylinder, containing a smaller solid ivory cylinder, the latter movable, and connected at its upper end with two upright needles, which, when pressed upon by the solid cylinder, move like the hands of a barometer along a flat metallic indicator divided into equal parts, so that when touched or pressed upon, they move until the pressure ceases, when they remain stationary, registering the pressure, which is reckoned in grammes and millimeters; the patient being laid down and the eyelids separated, the operator, by means of a silk thread, suspends the instrument by his teeth, and allows it gently to stand with its own weight on the outer side of the anterior surface of the eyeball, steadying it, but not holding it, by placing a finger against the side. The solid cylinder is allowed to project two millimeters below the level of the hollow one before being placed on the eyeball. So soon as the end of the projecting cylinder touches the globe, pressure is exerted, and the needles begin to register.

Proceeding to consider the cause of glaucoma, Mr. Walker, after mentioning the different views that had been held at various times, remarked that most probably the correct one was that held by Von Graefe, viz., that in all persons predisposed to glaucoma a rigidity and non-distensibility of the sclerotic exists, that this natural condition is increased and confirmed at the approach of

old age so that the ciliary nerves become pressed upon, their functions are interfered with, and the nutritive and absorbent action of the parts they supply becomes affected so that when slight causes of irritation arise the fluid contents of the eyeball no longer can be changed. The result is, that on the occurrence of inflammatory action no yielding of the sclerotic can take place, the products of inflammation are not absorbed, and increased tension follows. The most promising of the plans for relief at first employed, viz., paracentesis corneæ and intra-ocular myotomy have been gradually abandoned after repeated trials, and, in spite of strenuous opposition, the practice of ividectomy, first proposed by Von Graefe, has received the sanction of the foremost oculists of all countries.

The remainder of the paper was occupied with a review of the theories as to the rationale of the relief afforded by iridectomy. These all, however, tend to support the view that this operation acts by diminishing intra-ocular pressure, thus affording the restitution of conditions favourable to nutrition and circulation. Finally, Mr. Walker urged the early performance of the operation, as soon as a glaucomatous condition is fairly recognised.

PAPER X. On the Medical Control of Prostitution. By Wm. Carter, M. B. Lond.

In this paper the writer confined himself strictly to the inquiry whether the medical control of prostitution, such as that contemplated in the Contagious Diseases Acts, 1866 and 1869, was likely to be followed by a general decrease in venereal disease, passing by any discussion of the moral aspect of the subject as unsuited to the consideration of a purely medical society. After a brief review of the circumstances which gave rise to the acts and of the provisions contained in them, Dr. Carter objected that, before any great diminution of disease could be legitimately claimed under a partial administration of a system of control, it must be proved that such diminution was general throughout the country; because as there was abundant evidence to show that some of its most immediate results were to drive prostitutes to other districts,

and to promote clandestine prostitution, it was more than likely that the greater healthfulness of one neighbourhood and class were counterbalanced by the increased disease of others.

The rational course, then, would seem to be to extend the acts throughout the country. But the objection immediately arises, that the difficulty in carrying out these provisions increases in the same, or in a greater ratio, as the increase of area and population to which they are made applicable. The example of France was especially noticed, and quotations were given from the writings of several of the supporters of government medical control in that country, to show its complete failure to eradicate the evil; and, in view of such an example, it was judged to be unwise to adopt the system here; special evidence being adduced to show that in principle that system did not differ from the one imposed by the Contagious Diseases Acts.

The paper concluded with a discussion of what were considered the very ambiguous returns forwarded to the House of Commons by the Chief Superintendent of Police, on the effects of the Acts in the English and Irish towns to which they had been applied.

PAPER XI.

On some forms of Displacement of the Unimpregnated Uterus.

By J. Wallace, M. D.

This paper, revised, corrected, and greatly enlarged, will be found at p. 19.

PAPER XII.

On Catheterism of the Eustachian Canal. By R. Hibbert Taylor, M. D.

The idea of attempting to cure deafness through the medium of the Eustachian canal seems to have occurred first, said the author, to a postmaster at Versailles, named Gurgot, more than a century ago. By means of a bent sound introduced through the mouth, he at last succeeded in washing out the faucial orifice of the canal, and thus relieved his deafness. An account of this invention was submitted to the "Academy of Sciences," at Paris, in the year 1724, but it does not appear to have led to any further result.

Twenty years later, an English surgeon named Cleland, renewed the practice, and improved upon it by introducing the catheter through the nose. The instrument he employed is figured in the "Philosophical Transactions" for 1741, and resembles a small catheter pierced with lateral eyes at its distal extremity; but this would have the disadvantage of giving to any fluid injected through it a direction differing from that of the Eustachian canal. Although Cleland describes the instrument and the mode of using it, he does not say that he had employed it himself with success. The surgeons of Montpelier experimented with Cleland's instrument, but could not succeed in injecting the canal until they had made some modification in the catheter, probably by substituting a single opening at the end for the lateral eyes.

In 1755, Mr. Jonathan Walker published in the "Philosophical Transactions," a short memoir entitled, "New method proposed to restore the hearing when injured from an obstruction of the Tuba Eustachiana." Walker states that he was indebted to Mr. Jn. Douglas, the anatomist, who demonstrated in his class the possibility of passing a catheter through the nose to the Eustachian canal, for the idea which he reduced to practice in the living subject. Walker used a silver pipe, of about the size and length of a common probe, to which an ivory syringe was fitted when required. He appears to have been led to this practice from having observed at the post mortem examination of a young man who had been deaf for several years and had died of variola, that the Eustachian canals were obstructed by thick mucus, while the structure of the ears was otherwise healthy. Of six persons upon whom he operated, five were said to have derived more or less benefit. One of the instances is remarkable as the man had been deaf for eighteen years, and could only distinguish the voice of a person with whom he was familiar. After using five injections, separated by intervals of one or two days, he was able to hear the voice when moderately elevated, and could take part in an ordinary conversation provided the room was quiet.

Wood, in his treatise On diseases of the ear, narrates some striking cases in which a cure was effected from a condition of almost complete deafness. In some of these the injection was made through the nostril into the faucial extremity of the canal, and in others the membrana tympani was perforated, and the fluid passed from without inwards towards the cavity of the tympanum. Cures resulted from both of these methods. Walker does not mention what fluid he used for injecting the ear, but we may presume it was tepid water. Itard says he employed both plain and sea water heated to the temperature of an ordinarily warm bath.

Professor Tröltsch, of Wurzburg, in his excellent work on diseases of the ear, states that he injects the Eustachian tube with air both as a means of diagnosis and of cure; and the latter injection he considers useful in clearing the canal of mucus or any other removable obstruction. He has not observed any injury to result from this treatment, but regards the benefit derived as in general only temporary. He uses the catheter for introducing wires into the ears, in the application of electricity. Tröltsch objects to the employment of liquids for injection, and uses gases only.

Toynbee recommends an instrument of his own invention, termed an "Otoscope," for diagnosing the condition of the internal ear. It consists of an elastic tube, one end of which is introduced into the ear of the patient, and the other into that of the operator, while the patient closing his mouth and nose attempts to inflate forcibly the tympanic cavity. He agrees with former authors as to the utility of injecting the Eustachian canal, but recommends caution in introducing a stream of air into the cavity of the tympanum, as fatal effects have in some instances resulted from its unskilful use.

Wilde of Dublin employs the Eustachian catheter for diagnosis when the patient is unable to inflate the membrana tympani. He does not believe that lotions or vapours, when introduced through the catheter, ever reach the cavity of the tympanum, and he has no confidence in the treatment of what is termed "Nervous Deafness," by injections of ether or anything else. Tröltsch and Wilde employ an "air-press," for injecting the Eustachian canal; a rather formidable looking condensing machine which requires the use of considerable apparatus, besides being open to other objections.

My own experience, said Dr. Taylor, although hitherto not very extensive, has led me to form a favourable opinion of injection of the Eustachian tube with air, and I should not hesitate to employ it in any instance in which the patient was unable to inflate the tympanum. I always use a catheter passed through the nostril, and blow the air into the faucial extremity of the canal. operation is thus rendered very simple, the force of the current can be easily and surely modified according to circumstances, and the patient is free from all apprehension at the sight of much appa-I have not tried the injection of water or other fluid into the canal, but I see no valid objection to its employment, if conducted with caution, and it may easily be effected by means of a moderately sized syringe fitted to the wide extremity o catheter. The difficulty of introducing the beak of the catheter with certainty into the faucial orifice of the canal is no doubt considerable, and requires both dexterity and experience; but these obstacles are not greater than most persons can overcome with perseverance and practice.

PAPER XIII.

On some of the difficulties met with in the use of the Forceps.

By Dr. Steele.

This communication was supplementary to a former paper, in which the author advocated the more frequent use of the forceps (than is generally recommended in our text books) as a means of obviating the evils resulting from the prolonged duration of labour, irrespective of physical obstruction or other complications, and in which he endeavoured to demonstrate that the instrument technically known as the long double-curved forceps was the best adapted to every description of forceps delivery, and to all stages of the progress of the head through the pelvis. The object of the present communication was to show that the difficulties met with in forceps delivery were, for the most part, attributable not to the insufficiency or imperfection of the instrument, but to the fact that from several causes, such as slight disproportion, undue projection of the sacral promontory, and other irregularities, many cases were

unsuitable for the application of the forceps, in which other modes of delivery were indicated.

[The Editors regret that circumstances prevented them more fully reporting this interesting communication.]

PATHOLOGICAL SPECIMENS EXHIBITED.

The following table shows the various pathological preparations exhibited to the Society during the Session, arranged according to the viscera affected; while the history and characters of some of the most interesting, because rare, specimens are furnished in detail thereafter.

I.	Of the Digestive Apparatus.	
	Stomach and œsophagus, from a case of Car-	
	bolic acid poisoning, exhibited by	Dr. Cleaver.
	Perforating ulcer of the duodenum, exhibited by	Mr. Barnes.
	A greatly ulcerated cocum, from a phthisical	
	patient, exhibited by	Dr. Glynn.
	Liver, undergoing fatty degeneration, and riddled	-
	with abscesses, exhibited by	Dr. Turnbull.
	Liver, containing a large post-dysenteric abscess,	
	which communicated with the right lung,	
	exhibited by	Dr. Cameron.
	Liver, with an abscess occupying the entire	
	right lobe, exhibited by	Mr. Matthews.
	Liver, affected with hard cancer, from a man	
	50 years old, exhibited by	Mr. Matthews.
II.	Of the Organs of Circulation.	
	Heart, showing contraction of the mitral valve,	
	exhibited by	Mr. Matthews.
	Heart, showing well-marked mitral stenosis,	
	exhibited by	Mr Matthews.
	Heart, with diseased mitral and tricuspid valves,	
	from a boy, exhibited by	Dr. Glynn.
	Heart, affected with pericarditis, from a child,	
	exhibited by	Mr. Lough.
	Heart, greatly hypertrophied, from a lunatic	
	patient, exhibited by	Dr. Rogers.
	Heart, containing a cardiac polypus, exhibited by	Dr. Wallace.
	Spleen, affected with tubercle, from a phthisical	
	patient, exhibited by	Dr. Braidwood.

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	Aneurism of the Aorta within the pericardium, exhibited by	Dr. Hughes.
	Aneurism of the thoracic Aorta, very large, exhibited by	Mr. Banks.
	exhibited by	Mr. Matthews.
	Aneurism of the Abdominal Aorta, exhibited by	Mr. Matthews.
	Embolism of the popliteal artery, exhibited by .	
	Embolism of the uterine, iliac, and portal veins,	
	causing pycemia, and following division of the	
	cervix uteri, exhibited by	Dr. Cleaver.
ш.	Of the Genito-urinary Viscera.	
	Mamma, affected with cystic disease, and con-	
	taining intra-cystic growths, exhibited by .	Mr. Harrison
	Mamma, of an old man, affected with scirrhus,	MII. IIAIIISUII.
	exhibited by	Dr. Cleaver
	Uterus, from a case of puerperal fever, exhibited	Di. Cicavei
	by	Dr. Steele.
	Ovarian cyst, exhibited by ,	Dr. Steele.
	Hydatiginous chorion, exhibited by	Dr. Steele.
	Placenta and umbilical cord, diseased, exhibited	_ 4. 5.5525.
	by	Dr. Wallace.
	Tubal extra-uterine gestation, exhibited by .	Dr. Steele.
	Penis, affected with epithelial cancer, from a	
	man aged 26 years, exhibited by	Mr. McCheane.
	Kidney, affected with medullary cancer, from a	
	man aged 63 years exhibited by	Dr. Carter.
	Kidney, showing nephropyelitis, exhibited by .	Dr. Davidson.
	Oxalic Acid Calculus, removed from a child's	
	bladder, exhibited by	Dr. Rawdon.
	Three Lithic Acid Calculi, removed from child-	
	ren, exhibited by	Dr. Rawdon.
.V.	Of the Respiratory Apparatus.	
	Larynx, extensively ulcerated on its mucous	
	surface, exhibited by . ,	Dr. Carter.
	Tonsils, covered with a multitude of small, pecu-	
	liar masses, exhibited by	Mr. Hakes.
	Lung, affected with melanosis, exhibited by	Mr. Matthews.
	Lung, affected with primary cancer, extending	
	to spinal canal, exhibited by	Dr. Davidson.
V.	Cases of Fracture.	
	Ribs, fractured, some laterally, and some near	
	their cartilages, exhibited by	Dr. Cleaver.

Femur, showing impacted intracapsular from a lunatic female, aged 60 y	
hibited by	. Dr. Rogers.
VI. Tumours.	
Malignant tumour from the forearm, en	khited by Mr. Banks.
Simple tumour from the sartorius of a	boy, aged
11 years	Mr. Lough.
Large, non-malignant tumour of the le	owe r jaw,
exibited by	. Mr. Harrison.
Malignant tumour, of immense size,	removed
from the leg. exhibited by	. Dr. Cleaver.
Malignant tumour, implicating the	inferior
maxilla, and following the remov	val of an
epithelial cancer of the lower lip, ext	nibited by Mr. Harrison.
General cancer of skin and internal	organs of
an infant, exhibited by	. Dr. Davidson.
Osseous degeneration of the retina and	
exhibited by	. Mr. T. S. Walker.
Simple tumour, of immense size,	from the
scrotum, exhibited by	. Dr. Cleaver.

Among these various specimens, the history of the following deserve special note because of their rare occurence, or very large size.

The history of the case of Perforating Ulcer of the Duodenum was narrated by Mr. Barnes as follows:—The patient, æt. 39, was a gentleman of steady, active habits, who enjoyed excellent health, excepting that for some years he had been troubled after breakfast each morning with a sensation of suffocation, followed generally by vomiting, which afforded relief. This feeling was at times so severe as to cause him alarm, and was felt only after breakfast, but if he abstained for some hours from that meal, the sensation was not so painful.

On June 21st, 1870, he was suddenly seized with a feeling "as if something had given way inside him," and this was followed by a sensation of deadly faintness, with excruciating pain a little above and to the right of the umbilicus. The pain continued without intermission for many hours, his agony becoming almost unbearable. When Mr. Barnes saw the patient, almost twenty hours after the first seizure, his skin was moistened with a clammy

perspiration, and was of a dingy-blue colour; his pulse was very feeble and flickering; he lay on his back, with his left leg flexed on the abdomen, his right limb stretched straight out. His hands were thrown above his head, and grasped convulsively the bed-rail, in order to prevent, as he said, his rolling out of bed with the pain. There was no vomiting, but he experienced paroxysms of pain, and made ineffectual efforts at defectation. Chloral was given, which relieved the pain, but the patient became drowsy, his pulse grew steadily weaker, and he died in twenty-four hours. On postmortem examination, a small, round, thin-edged ulcer of the duodenum was found, opening into the peritoneal cavity.

The following history of Tubal Extra-uterine Gestation was given by Dr. Steele when he exhibited the specimen. The patient was aged thirty-five, had had two children, did not believe herself again pregnant, but had suffered for two months from hæmorrhage from the vagina. There was some fulness of the abdomen, with on percussion below the umbilious. No distinct tumour could be felt, but the uterus was enlarged. Bye and bye, rigors occurred, and were followed by severe constitutional disturbance and diarrhea, with profuse hemorrhage per anum. She was finally seized with a sudden agonising pain in the abdomen, which became rapidly and enormously distended, and she died in two hours. After death, the peritoneum, mesentery, and intestines were found covered with grumous fluid, and there was a considerable quantity of blood in the abdomen and pelvis. A portion of solid fœces, which had escaped from a small laceration in the colon near the ileocœcal valve, lay in the left iliac region. midst of a mass of matted tissue and coagulum, a fœtus, apparently of about the third month, was found; and near this was a mass of placental structure adherent to the flattened and hypertrophied wall of the fallopian tube, which was ruptured. The ovaries were normal.

Immense Malignant Tumour of the Leg.—The patient stated that almost twenty-four years ago she received a kick from a cow on her right leg, which did not hurt her much at the time, but the place always remained tender. Six years ago (or eighteen years after the accident) she observed a small lump, about the size of a

This increased slowly, marble, occupying the painful spot. becoming as large as a walnut in the space of three years, but not causing any pain. At that time she strained her leg so severely as to confine her to the sofa for three months. Leeches and fomentations were applied, but from that date the tumour became painful, and grew rapidly. On admission into hospital, her right leg measured 22in. in circumference. The tumour was oval, and as large as a melon, being most prominent on the inner side of the It occupied the whole of the popliteal space, and extended downwards to the tendo achilles. On the outer aspect of the limb was a prominent portion, evidently containing fluid. had an elastic feel, its surface was smooth, and traversed by large veins; but there was no enlargement of the glands in the groin or Mr. Bickersteth amputated at the lower third of the thigh, but the patient died of pycemia. The tumour on section had a marked cerebriform appearance, with a small mass of fibrocartilaginous character, on its inner side. When examined with the microscope, the soft portion of the tumour was found to consist of masses of closely-packed, rapidly-proliferating cells of a highly malignant character, but the firm portion exhibited true cartilaginous cells.

A specimen of Nephro-puelitis was shown by Dr. Davidson, who remarked that the patient died of dropsy, consequent on cirrhosis of the liver. His kidney was a little above the average size, and lobulated on its surface. When cut open, this kidney was found to be converted into a series of cavities, arranged after the fashion of the pyramids of Malpighi, and filled with a thick putty-like material, which, on microscopical examination, was found to consist of shrivelled-up pus cells. Originally there must have been nephropyelitis or suppurative general inflammation of the whole renal tissues. The corresponding ureter was thickened and imper-This form of disease is described, said Dr. Davidson, by Bailey, and even by Wilks, as a scrofulous affection, but is rather to be regarded as a chronic abscess, the purulent contents of which have become inspissated. The left kidney appeared healthy on section, but enlarged to three times its normal size.

Dr. Davidson showed a specimen of a subcutaneous tumour,

removed from an infant four months' old. It somewhat resembled a large carbuncle, and was situated over the hip, but on section it proved to be a true scirrhous cancer. There were several others similar to it on the back and legs, besides numerous nodules varying in size from that of a pea to that of a filbert, all over the body. The left lung was filled with cancerous nodules, and the left costal pleura was lined with a continuous mass of hard cancer. When the child was born he was covered with blebs, and with structures like minute noevi, which bled easily, giving the child the appearance of being covered with a congenital syphilitic eruption. It was considered to be such, and the child treated accordingly. After a time, many of the little tumours disappeared, and the child throve till last month matters altered, and fresh tumours There was no history whatever of syphilis; and sprang up. the case was one of true cancer, though there was no trace of its being hereditary.

An example of Soft Cancer of the Lung was also exhibited by Dr. The preparation had been removed from the body of a young woman, who died in the Royal Infirmary four days after her admission. She came in with symptoms of lung disease, in many respects closely simulating phthisis of one lung, and which had existed for a considerable period. She suffered also from complete paraplegia, with ancesthesia, reaching up nearly to the armpits, which had commenced three or four weeks before her admissionbeginning in the feet, but gradually and steadily passing upwards. Her urine and motions were passed in bed, and a large sloughing bedsore existed over the sacrum. Paraplegia being the disease which terminated life, the spinal cord was carefully examined at the autopsy, the theca of the cord having been punctured accidentally, about half-an-ounce of serum escaped. In cutting through the vertebral laminæ, at a point nearly opposite the second dorsal vertebra, a yellowish mass, of about the size of a large bean, was divided. It seemed to spring from the inner aspect of the right lamina of the vertebra to which it belonged, and projected into the canal, pressing upon the cord. It very closely resembled a portion of the soft, light-yellow fat which forms little masses within the spinal canal. On examining the cord there was found.

at a point about an inch below this mass, a portion of the nervous tissue undergoing white softening, not very advanced, but quite recognisable by the naked eye. The mass above-mentioned adhered firmly to the dura mater, and was, therefore, torn through in removing the cord. Its nature was explained on opening the thorax, when it was discovered that the right lung was the subject There were a few of soft cancer diffused through its centre. cancerous nodules on the pleural surface, but none in any other part of the body, except in the bronchial lymphatic glands. appeared, then, to be primarily a case of cancer of the lung. careful examination this cancerous infiltration was found to have passed backwards along the posterior aspect of the chest, creeping along the periosteum of the vertebra, but not attacking the bones. It then reached the spinal canal, where it had, so to speak, "fungated" out into the little mass which pressed on the cord. It had crept through between the vertebral laminæ.

Mr. George Walker exhibited the heart and popliteal artery of a patient, in whom an Embolus had been propelled from the aortic valve into the left popliteal artery. He stated that R. F., set. 34, had been extremely dissipated till within the last year or two of Shortly before his death he was under treatment in a hospital on account of epistaxis and hæmorrhage from the bowel. The bleeding was relieved by the removal of hæmorrhoids, but the epistaxis persisted. He also had purpura. Mr. Walker saw him about a fortnight after he came out of hospital. He had been a very powerful man, but was now greatly emaciated. Purpuric spots were scattered over the trunk and lower limbs. The eye was at once struck with an extraordinary pulsation in the arteries—the carotids seeming to leap out of their beds, while arteries, whose pulsation under ordinary conditions could not be detected, now gave the beat of a normal radial. The patient was little conscious of this condition, and complained only of slight cardiac palpitation. He suffered most from severe pain in the left calf, which had commenced gradually during the previous night, and was accompanied by numbness and coldness in the corresponding foot. Mr. W. found the left leg cold to the touch, the left posterior tibial could not be felt, and the dorsalis pedis only very faintly. On the sound (right) limb these arteries, and also the anterior tibial, as far as its origin, could not only be felt, but seen. The left femoral artery was as distinct as the right one, as far as the opening in the adductor, but below that point the left popliteal pulsated very feebly. Pressure over the lower part of the popliteal region caused great pain, and the artery near its terminal bifurcation was not so compressible as the right one. There was no swelling, but a slight diminution of sensibility in the left foot. The cardiac impulse was perceptible over a considerable area.

By the use of suitable remedies the patient's symptoms were relieved. The dorsalis pedis pulsated more gently, and a large artery could now be seen branching off from the terminus of the femoral, passing down by the side of the tendon of the adductor magnus muscle over the inner condyles of the femur and tibia, and thence crossing the latter bone about the middle of the leg. Another artery could be felt crossing the patella; while a third The purpura and epistaxis had now ran along its outer side. disappeared, and the circulation generally was quieter. soon, however, considerable inflammatory thickening was detectable along the lower end of the left popliteal artery. The dorsalis pedis could still be felt pulsating feebly, but this ceased entirely in another week. The patient's general health continued, however, to improve, and he began to move about, complaining only of the foot being very cold.

On Dec. 26th, 1870, after exposure to cold, his legs became codematous; albumen and small tube casts appeared in his urine; pneumonia soon set in, and he died in ten days thereafter.

Autopsy.—The spleen was much enlarged. The kidneys were enlarged, and their cut surfaces swollen from recent exudation. The lungs were found healthy, except at the lower part of the right middle lobe, which was congested and impervious to air throughout a well-defined area. No embolus could be found in the artery supplying this part.

The heart was much enlarged, especially its left half. The right auricle was filled with its usual venous clot. In the right ventricle was observed a partly decolorised clot, enlaced closely among the papillary muscles and tendons, and extending along the pulmonary

artery to its bifurcation. In the left ventricle was a similar clot, but larger, which extended into the subclavian and carotid arteries, and for some distance along the descending aorta. A tenacious coloured clot was applied to the anterior surface of this older one, but could be peeled off it intact. The anterior and posterior segments of the aortic valves were each perforated by an aperture about one quarter of an inch in diameter, and their edges were fringed with a thick and irregular mass. The third or right segment could close, but from its centre projected a roughly pyramidal mass of cheesy-looking matter, terminating in a cretaceous point which, when the valves met, fitted into the apertures in the other segments. In the left popliteal artery was found a mass of the same character as those observed on the aortic valves, partly of cheesy consistence, but with some gritty spots. The vessel was completely plugged, but although the vein was adherent to the artery, and the surrounding tissues were all matted together with lymph, there was no sign of endo-arteritis properly so-called, and only a thin delicate clot on the cardiac side of the embolus. Mr. Walker remarked that he believed that in this case there had taken place simultaneously an atheromatous and a calcareous degeneration, as also an actual growth of lowly-organised tissue leading to the destruction of the larger part of two segments of the aortic valves and to the embolism.

Dr. Cleaver showed an immense Tumour of the Scrotum removed by Mr. Bickersteth from a patient in the Infirmary. The patient was almost forty-six years old, and he noticed a lump about the size of a marble in his left groin seventeen years ago. One day it slipped down rather suddenly into the scrotum, but he replaced it. It fell again, however, and remained in the scrotum where it steadily grew till it was nearly the size of a head. The skin and subcutaneous textures gradually assumed an hypertrophied action, so that the whole scrotum formed a tumour reaching to below the knees when the patient was in the erect posture. Being a tailor, he was able to pursue his occupation without much distress, and he seldom if ever went out. His sexual appetite was not affected, and the tumour caused no pain. The testicles lay in front of the tumour, but the penis was entirely buried in the mass, its site

being marked by an umbilical-like depression. Mr. Bickersteth commenced operating by making two incisions along the line of the spermatic cords, tracing them down till the testes were reached and then extracting these from the tunicæ vaginales. The penis was next dissected out, and lastly the root of the tumour, along which its bloodvessels entered, was reached and ligatured. With a few sweeps of the knife the tumour and hypertrophied skin were carried off, enough skin being left to cover in the testes.

Mr. Matthews exhibited an Aneurism of the Superior Mesenteric Artery removed from a patient in the Royal Infirmary, who died in a few hours after admission. He had been a topsawyer, and in the habit of constantly bending backwards and forwards. He had suffered from sickness, vomiting, and epigastric pain for some months, and the presence of a swelling in the region of the stomach could be traced back for four months. The tumour pressed on the gall-duct, and had formed a large sloughing ulcer of the duodenum.

COMMUNICATIONS.

Dr. Carter showed the new substance chlor-alum, which has been lately brought under the notice of the profession by Mr. Gamgee, as a disinfectant. Among its advantages are these, that it is not poisonous, and that the results of its disintegration are good as disinfecting agents and destroyers of bad smells. It is formed from chloride of calcium and sulphate of alumina. A complete decomposition results, and the chlor-alum can be obtained of perfectly regulable strength. Dr. Carter thought that in certain of its effects it resembled those substances used in dyeing, termed mordants, and which are used for the purpose of precipitating colouring matters on cloth, and then fixing them. It is eminently preservative of animal tissues, and not corrosive. Dr. Carter narrated the case of a male patient with hemiplegia, whose urine became so exceedingly offensive as to render the air of the apartment in which he lay almost unbearable. Dr. C. thought to inject a dilute solution of chlor-alum into his bladder, but most fortunately before doing so, he added a little of the solution to some urine which the patient had passed, and found that it caused the

urine to become semi-solid; what might have been a serious accident was thus avoided. Dr. C., however, had this disinfectant applied all about the patient's person and in his bedroom, with marked improvement in the atmosphere of the chamber.

- 2. Dr. Carter exhibited a simple, but effective apparatus for testing the amount of air either inspired or expired. It consisted of a tube graduated to known measurements on the outside. This was placed in a vessel containing coloured water, which ran up it when the air was exhausted by means of a small tube passing up its centre, and connected with the mouth. When air was inspired the coloured fluid at once fell. The extent to which the coloured fluid rose and fell, as marked by the graduated scale on the outside of the glass tube, indicated the amount of air expired or inspired.
- 3. Dr. Dale communicated the case of Master O., who was seized with scarlet fever on April 11th. On April 29th there was slight swelling in the neck; on May 1st he had general anasarca, with albuminous urine; on the 4th he had a short, dry cough and sneezing; on the 5th his cough continued, but the cedema began to subside. Measles became fully developed on May 6th, and all the swelling disappeared; by the 9th the eruption of measles had passed off, but the dropsy began to return. On May 10th the child was nearly in the same condition as on May 1st. The dropsy then began to yield to treatment; and by May 19th the lad was quite well.

Dr. Dale also communicated the case of Master B., who was seized with scarlet fever on July 22nd. On August 7th his sister, who had been much with him, and was fifteen years old, exhibited the same disease, which was, however, confined exclusively to the left half of the body, the left tonsil, and the left half of the tongue presenting the characteristic scarlatinal appearance, and the rash being developed on the same side only. Desquamation was also confined exclusively to the left side. She had always been a strong, healthy girl, and never had exhibited any signs of debility or loss of nervous power on either side.

4. Mr. Edgar Browne read a "Note on Hydros." Hydros, he said, is a word not used by systematic writers in England, but it

has been occasionally employed as synonymous with herpes labialis and miliaria. It has recently been adopted by Bazin to designate a disease hitherto not classified, and a brief report in the *British Medical Journal* has drawn the attention of the profession in this country to the affection.

The disease described as Hydroa approaches in its clinical characters to an erythema and a herpes. Like the one, it is uncertain in its duration—sometimes fugitive, sometimes persistent, uncertain in its selection of a seat, but by preference symmetrical, and most frequently attacking the face and extremities; though resembling the other in the development of vesicles, or small bullæ, and in having a spontaneous subsidence.

M. Bazin recognises three varieties — Hydroa vesiculeux, Hydroa vacciniforme, and Hydroa bulleux, and he includes all these in the catalogue of arthritic maladies. Vesicular hydroa attacks the skin and mucous membrane, choosing generally those parts of the one which are habitually uncovered, and of the other the inside of the cheeks, lower lip, and fauces. The affection is preceded by malaise, anorexia, and slight pyrexia; but these symptoms might be absent, or so slight as to escape notice. eruption consists essentially of small, light-red or pink patches, varying in size from that of a lentil to that of a shilling. On the second day a central vesicle appears; this dries rapidly, and forms a light crust in the centre, while the fluid at the circumference seems to be re-absorbed. In the course of a few days, the crust falls, and leaves a slight discoloration, which is only slowly effaced. The duration of the attack may be from two to four days, the eruption appearing in crops, which occupy four or five days in evolution.

The vacciniform variety is simply the same disease, with a tendency to produce a seropurulent secretion, and is of greater chronicity.

The bullous variety resembles pemphigus, but is easily, if not spontaneously, curable at the end of three to six months. The bullæ are irregular in shape, but never attain a greater size than that of an ordinary pea.

The author related three cases—one, in which a well-marked

eruption appeared, copiously on the arms and forearms, but sparsely on the trunk, of a healthy young woman after parturition. Its duration was nearly five weeks, and it left for some time afterwards a reddish-brown stain, and a sense of burning and itching. The case had been supposed to be "shingles;" but the irregular distribution of the vesicles, their separate red bases, their aggregation in the forearm, where zoster never occurs, the bilaterism, and absence of neuralgia, constitute important differences.

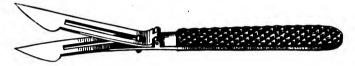
In a second case, the eruption appeared chiefly on the anterior aspect of both arms and forearms, lasted for six weeks, left stains, and was exceedingly irritable, but was not accompanied by neuralgia, joint affection, or constitutional disturbance.

In a third instance, a girl, aged seven years, frontal neuralgia, with amaurosis of the right eye (O. S. normal), preceded by two days an eruption on the back of the neck and shoulder, which was more developed on the right than on the left side. On the eighth day, a typical eruption of erythema nodosum was noticed on both legs, and constitutional disturbance was manifest. The right eye was attacked with phlyctenular ophthalmia. At the end of two months and a half, no eruption was present, neuralgic pains were occasionally felt, and vision remained imperfect. In this remarkable case, we saw erythema with herpetiform eruption in one part of the body, erythema nodosum in another, and neuralgia, with functional disturbance, in another. It resembles, but is less severe than, an instance of erythema nodosum, with a vesicular eruption on the face, neck, arms, and legs, along with phlyctenulæ on the right conjunctiva, reported by Mr. J. Hutchinson.

The above cases (with others reported) seem to show that we must recognise a variety of disease evidently closely allied to erythema, but, in many respects, resembling herpes—apparently not connected with any special zymotic poison of its own, nor with that of the recognised exanthems, nor with syphilis, nor, so far as the cases recorded enable us to judge, with any particular diathesis or state of health. It may possibly prove to be the missing link between diseases at present considered as not related to each other.

5. Dr. Braidwood showed a new form of Vaccinator, resembling the Danish one, only made like Valentin's Knife, with

separable blades, admitting of its being readily and thoroughly cleaned. In using this vaccinator, the blades having been closely approximated, the instrument, held like a pen between the thumb and forefinger, is dipped in the lymph, and takes it up as a pen does ink; an incision being then made, the lymph flows into it. The accompanying woodcut represents the size and shape of the instrument. The advantages of vaccinating with this form of vaccinator are rapidity and painlessness, while the result is as certain as by any other method.*



- 6. Dr. Lyster exhibited the *Pneumatic Aspirator*, which is fully described at p. 79 of this Journal.
- 7. Dr. Turnbull made some interesting observations on a case of Idiopathic Anomia, in a male patient who had died in his wards. The patient had gradually sunk, without having exhibited any symptom pointing to disease of any special organ. general pallor and loss of strength were the marked features of the case, and these had been coming on for a considerable time. blood was examined during life by Dr. Davidson, who reported that while there appeared to be no absolute increase in the number of the white corpuscles, there was a decided diminution of the red, which were also badly formed. All the viscera were found after death to be extremely bloodless, but actual disease was observed only in the following, viz., the heart, which was very flabby and soft, and, when examined microscopically by Dr. Davidson, was discovered to be in a highly advanced stage of fatty degeneration; the liver, which was somewhat enlarged, and also fatty; the right kidney, which was much smaller than normal, and granular on the surface, while its cortical substance was very much diminished in amount. It may be further stated that the spleen was much smaller than usual, and the left kidney, apparently compensating for the right one, was abnormally large.

^{*} This Vaccinator is made by Messrs. Maw, Sons, and Thompson, 12, Aldersgate Street, London.

Dr. Turnbull, after drawing attention to the patient's symptoms, remarked on the perfect inutility of any of the ordinary remedies for anomia, all of which had been tried in this case; and he showed how iron, an almost certain cure for certain forms of this disease, was in this instance quite useless. He referred to Dr. Inman's paper on "Male Chlorosis," some of the cases described in which exactly resembled this one. Finally, he remarked that considerable speculation might occur as to whether the fatty condition of the heart and liver formed in this instance the primary disease, leading to an enfeebled circulation, and so to an imperfect power of forming good blood; or whether the first lesion was not of some obscure nervous nature primarily affecting the blood-forming process, so that the viscera, from being badly nourished, lapsed into the fatty condition found after death.

- 8. Dr. Glynn exhibited a very ingenious Ophthalmoscope, with tube, lamp, and reflector in one, so constructed that there was no occasion to put the patient in a dark room. This instrument, and its mode of application, is fully described by Dr. Glynn at p. 113.
- 9. Dr. Davidson read a short communication advocating the the use of Pepsine Wine in those forms of diarrhœa in infants marked by the food passing almost unaltered through the bowels; and gave examples of its use.
- 10. Mr. Edgar Browne showed a pair of socks, which had caused a month of suffering to a gentleman. They had alternate light and dark stripes; the latter were of two kinds, one purple, and one somewhat yellow. Dr. J. Campbell Brown had found that the purple stripes were dyed with azuline, and the yellow ones with peonine; but he could not say which was the poisonous dye. The patient had danced in tight boots with these socks on, and the skin had then inflamed in lines corresponding to the stripes. Bullæ formed, and became confluent, spreading over the healthy interstices between the inflamed lines, till the leg had the appearance of having been blistered. Mr. E. Browne explained how sundry errors had been made in performing experiments with poisonously dyed cloths, by the experimenter wearing portions of them on such a part as the arm. No effect was often produced; whereas it was clear, that, for the liberation of the poisonous

material and its absorption, the skin must be thoroughly moistened, and the cloth be closely applied. These conditions were, in this case, exactly fulfilled, by the patient dancing in these socks and tight fitting boots.

TRANSACTIONS OF THE MICROSCOPICAL SECTION OF THE LIVERPOOL MEDICAL INSTITUTION.

SESSION 1870-71.

Communicated by Isaiah DE Zouche, M.D., Honorary Secretary.

First Meeting, Oct. 21st, 1870.
Dr. WATERS in the Chair.

Dr. Waters made some introductory remarks on the use of the microscope in medicine and surgery, and afterwards read a paper "On the Intimate Structure and the Morbid Anatomy of the Human Lung," which he illustrated by numerous microscopical specimens.

Second Meeting, Nov. 18th, 1870.
Mr. Hamilton in the Chair.

Dr. Braidwood read "Original Observations on the Microscopy of Vaccine Lymph."

The author stated that the most important elements discovered in vaccine lymph by means of the microscope were — very delicate fibres, no doubt a variety of fibrinous deposit; extremely minute, spherical, highly refracting particles, which were most abundant in recent lymph, and which Dr. B. believed to be vaccine germs; and red blood corpuscles. The examinations of vaccine on which these observations were based were made with τ inch objective lens.

The vaccine germs are met with in all specimens of vaccine lymph, and are most abundant in recent lymph. They are most distinctly seen in lymph which has been allowed to dry on the glass slide, and in lymph acted on by ether. In recently removed lymph, they are observed to aggregate in twos, threes, or fours; and sometimes present molecular movements, but exhibit no other sign of life. They are unaffected by reagents.

The next most common ingredients of vaccine lymph are the red blood corpucles, which are met with in ninety-five per cent. of specimens of vaccine. Dr. B. remarked that he had found the largest number of blood corpuscles in lymph collected by most experienced vaccinators, although the lymph to the naked eye appeared to be free from blood. In the fluid forms of vaccine lymph they are readily distinguished; but in these, and still more frequently in dried lymph, they often present very contorted forms.

We meet, thirdly, with very delicate fibres. These are extremely fine, transparent, and granular. They resemble very closely the molecular fibres obtainable from ordinary blood coagula. They are seen only in lymph which has been preserved in the fluid state, and only when lymph has been thus stored up for some time. To the naked eye they appear as a whitish coil, in the centre of a drop of lymph. They seem to be dissolved by dilute acetic acid, and by ether.

In addition to these elements of vaccine lymph, we find in this fluid sometimes epithelial cells, phosphatic crystals, when the fluid has been long preserved in the fluid state, occasionally crystals of cholesterine, and in very old lymph fungoid structures are met with. Granules, and amorphous bodies, which may be included under the term debris, are generally found in specimens of fluid vaccine, and are probably derived from the impure interior of the capillary tube in which the lymph has been preserved. Occasionally, pus corpuscles are found in vaccine, indicating that the lymph has been removed at too late a date.

Dr. Braidwood stated that his observations were based on the examination of over one hundred specimens of vaccine lymph, collected by himself and by others, and preserved in various ways, and he concluded with a short account of the action of various reagents on vaccine lymph.

Mr. Newton showed a specimen of Tænia Acanthotrias.

Third Meeting, Dec. 16th, 1870. Dr. Whittle in the Chair.

Dr. Caton read a paper "On Pigment in Animals," consisting

of a brief description of the physiology and pathology of those coloring matters which can be examined microscopically.

I. Under the head of Physiology, were considered the situations and visible characters of pigments in the various classes of the animal kingdom, and its relation in man, specially to age, sex, character, and habits of life. The importance of sunlight and heat, and probably also of a carbonaceous diet, were pointed out as favoring the development of colour; the spontaneous movements of pigment cells and granules existing in many animals; and, lastly, the general and special functions of pigment, were described.

II. Under the head of Pathology, were described the increase of pigment in the skin in Addison's disease, melasma, cyanopathia, and melanæmia; the partial connection of these diseases with the formation of free pigment granules in the hepatic and splenic veins, the increase of pigment in the brain in insanity, morbid stearrheal pigment, anthracosis, melanotic tumors, and the local deposits of pigment which succeed inflammation, many of these diseases being probably compensatory for diminished excretion of carbon. The paper concluded with a notice of the morbid diminution of the coloring matter in albinism, leucopathia, &c. Specimens were exhibited, illustrating the pigment cells of the various classes of animals, the deposits in the skin, brain, &c., of man, and the chief morbid conditions described in the paper.

Fourth Meeting, Feb. 24th, 1871. Dr. WATERS in the Chair.

Mr. Newton exhibited a Gründlach's r_{2}^{1} inch objective, costing $3\frac{1}{2}$ guineas.

Mr. Hamilton showed specimens of the lymph of small-pox and chicken-pox; also of vaccination and re-vaccination, taken at various stages; and remarked on their peculiarities.

Dr. de Zouche read a paper on "Oxaluria."

He mentioned especially two instances, as examples of this affection. One, a case of debility following rheumatism; the other, a case of spermatorrhea. In both of these, oxalate of lime was found in the urine during several weeks. He referred to the difficulty of determining the amount of oxalate of lime in the urine,

which might be considered indicative of disease; and, on the other hand, its very frequent occurrence in conditions of mal-assimilation, as in convalescence from acute diseases, when the assimilative functions are still imperfectly performed; in dyspepsia, scrofula, and many other diseases. Its presence in cases of spermatorrhæa, attributed by some to the fact that oxalic acid is found in the spermatic fluid, is explicable also by the general nervous debility and disinclination to take exercise which characterise this affection. The intimate connection between the oxalic and uric diatheses, and their alternation in the same individual, notwithstanding the presence of nitrogen in uric acid, was pointed out; also the surgical interest of oxaluria, from the formation of vesical calculi of oxalate of lime.

He briefly referred to the treatment of oxaluria, which should be directed to the cause of the affection. Dyspepsia should be treated by careful dieting, and medicinally the nitro-hydrochloric acid is found to be one of the most useful remedies. Moderate exercise is to be recommended, and a healthy action of the skin maintained.

Fifth Meeting, March 24th, 1871.
Dr. Waters in the Chair.

Mr. Newton read a paper "On the Illumination of Objects for the Microscope."

Mr. Newton dwelt on the great importance of the subject, asserting that an observer who is thoroughly acquainted with the best modes of lighting the object will be able to show far more and better with an inferior instrument, than another who is ignorant of the subject can do with a better and more expensive microscope. He enumerated the various sources of light usually employed, as day light, oil lamps, camphine and paraffine lamps, and coal gas burners. He showed the various modes of directing and concentrating these sources of light, as Amicis and Reade's prisms, the parabolic illuminator, the concave and plane mirrors, Ross and Swift's achromatic condensers, the use of diaphragms, stops, &c. Also the modes of illuminating opaque objects by the Lieberkuhn and side reflectors, and the bull's eye condenser. He pointed out the evils of excess of light at various angles falling on

the object at once, and explained that rays parallel, or nearly so, were the best; and that the smaller the illuminating pencil, so long as it was sufficient for the purpose, the clearer the image. He also dwelt on the superiority of oblique lighting from one direction, which was illustrated by Nobert's test plate, containing nineteen bands of lines from TTOOTH to TTTOOTH inch asunder, all ruled within the width of a horsehair. This was exhibited under Powell and Lealand's toth immersion object glass. He exhibited also both transparent and opaque objects under various modes of illumination.

Sixth Meeting, May 19th, 1871. Dr. Waters in the Chair.

Mr. Harrison gave the particulars of a case, in which uric acid was passed from the bowels.

Mr. Hamilton described a case of disease of the skull, in which a peculiar deposit filled up the excavated portion of bone.

Mr. T. S. Walker exhibited microscopical sections of a specimen of osseous degeneration of the retina, the result of inflammation of the eyeball, from injury caused by a sharp piece of wood striking the globe.

After the business proper at each of these meetings was discussed, the members examined numerous objects of medical interest, placed under a number of microscopes in an adjoining room.

ABSTRACT OF THE PROCEEDINGS OF THE LIVERPOOL NORTHERN MEDICAL SOCIETY FOR 1870.

I.—Pathological Specimens Exhibited.

By Dr. Nottingham.

- 1. A large benign Tumour—recently removed from the abdominal parietes.
- 2. The brain of a man who had died from concussion. The left side was congested, and blood effused on its surface; the left lateral ventricle contained a large clot, and on the surface of the dura mater of the same side was also a large clot. The deceased had been a cab-driver, and fell off the box of his car, landing on his occiput. He walked to the Southern Hospital after the accident. Externally there was a small scalp wound in the occipital region. He was fifty-three years old.
- 3. Heart in a case of Sudden Death.—The deceased, a man thirty-five years of age, died suddenly, after arriving home from sea. He walked home, complained of feeling sick, and died in about two hours. He was supposed to have been in good health prior to this. The heart was found very much enlarged, weighing 1\frac{3}{2}lbs.; the lungs were congested, and the brain shrunken.
- 4. Abdominal Tumour—from a woman upon whom ovariotomy had been performed two years previously.
- 5. Fracture of the Fourth Cervical Vertebra.—A man, aged thirty years, was admitted into the Southern Hospital on account of an injury of the neck. He died ten days after admission, while returning from the water-closet. The right transverse process of the fourth cervical vertebra was found to be fractured. It was suggested that the straining during defectation might have caused the fractured process to impinge on the phrenic nerve, and so induced death.

By Mr. HARRIS.

- 1. A small Fibrous Tumour—from the leg. It was situated between the external mallcolus and the tendo achilles, and occasioned great pain throughout the limb, up to the hip, interfering greatly with progression. The removal of the tumour, which was no larger than a pea, relieved the patient of all her symptoms.
- 2. Mammary Tumours.—The first specimen shown was about the size of a marble, hard, and apparently cartilaginous. It was first noticed four months prior to its removal, was moveable, and situated external to the nipple. The patient was a married woman, thirty-three years old.

The second specimen was about the size of an orange, was more indurated in its centre, appeared striated on section, and, although it had not been examined microscopically, it presented a suspicious character. The patient was thirty years old, and not married. The tumour was first noticed fourteen months prior to the operation.

- 3. A Needle—two inches long, which Mr. H. had removed from a child six months old. It lay transversely among the abdominal muscles, and gave rise to distressing symptoms, which were at once relieved by its removal. There was no history to show how long it had been retained, but it must have been below the skin for a considerable time, as a swelling, about the size of a hazel nut, surrounded it.
- 4. A large Warty Growth—of the size and appearance of a cauliflower, removed from a young man, twenty-seven years old. It was situated over the left sacro-iliac synchondrosis, and was supposed to have existed since birth.
- 5. Two Uterine Tumours—Mr. H. had recently removed. The first was about the size of a walnut, of a fibroid character, and had existed in the uterus of a woman, thirty years of age, who had borne children. There was the usual history of severe hæmorrhages, &c. It was removed by means of the ecraseur, and a good recovery followed.

The second tumour was about the size of a small placenta, and had been forced down into the vagina during defectation. It was removed by ligature, and the patient did well.

By Mr. PARKER.

- 1. Caries of Vertebræ.—The disease had existed in a boy, causing angular curvature, and affected the sixth and seventh dorsal vertebræ. An abscess formed, which was eventually opened, and its cavity injected with carbolic acid lotion. The case terminated unfavourably.
- 2. Cardiac Inflammation.—The subject was a boy, fourteen years of age. There were many evidences of endocarditic depositions, and the pericardium was so adherent as to defy separation from the substance of the heart without destroying its structure. The disease commenced with articular rheumatism of the knee, which was relieved by the use of perchloride of iron; dyspnœa ensued after a while; an endocardiac bruit was detected, and a peculiar tumultuous sound in the precordial region. Death took place in four weeks from the commencement of the attack.
- 3. Rupture of the Cœcum.—The deceased was a boy, aged ten years, much emaciated, and who had complained of pain in the stomach, and faintness. During life there was observed a swelling in the right renal region, and peritoneal tenderness. Cod liver oil and a liberal diet was ordered, but no evidence of tubercular disease could be found. Shortly before death, the tumefaction disappeared. At the autopsy the cœcum was found to be ruptured, while the peritoneum and the abdominal walls below the umbilicus were filled with a creamy fluid. Some potato skins were discovered in the cœcum, and an almost impervious stricture in the commencement of the ascending colon.

By Mr. E. GRATTAN.

An Anencephalous Fœtus.—The parietal bones, the squamous portion of the temporals, the frontal above the superciliary ridges, and the occipital bone above the inferior ridge, were absent. The brain substance was wanting. At about the fifth month of gestation, the mother had received severe injuries from her husband.

By Dr. M. HILL.

Aortic Aneurism. - The aneurism proceeded from the arch of

the sorts, and opened into the left bronchus. The absence of stethoscopic signs had prevented the diagnosis of the lesion during life.

By MR. J. W. IRVINE.

- 1. Os Calcis—of a boy, seventeen years old, which had been removed three weeks previously. The lad had suffered from disease of this bone for nine years, and had been subjected to repeated gougings, which afforded only temporary relief. In excising the os calcis, the usual incisions for Pirogoff's amputation were made. The patient made a good recovery.
- 2. Diseased Bone removed in excision of the Elbow Joint.—
 The articular cartilage of the radius, and the ends of the ulna and humerus, were removed, while about two inches of the latter bone, being diseased on its outer aspect only, were removed. The diseased condition is ascribed to a blow from a hammer, received nine months previously. The case is doing well.
- 3. Diseased Femur—removed by Mr. I. by amputation through the hip joint. Excision of the knee had been previously performed, but the patient was a strumous subject. He is making a good recovery.

BY MR. HANBURY.

Autopsy on one of the St. Joseph's Chapel victims.—Regarding the sufferers from the crush at the St. Joseph's Chapel, Mr. Hanbury stated that, of those who had survived their injuries, only one sustained fracture of any bones, five were removed to hospital, five walked home, two had convulsions, and one delirium, while fourteen were found dead; but in only one case was a post mortem examination ordered. The aspect of nearly all of those who were killed was calm. The subject of autopsy was sixty years of age; the face was livid, five ribs on the left side were fractured, and two on the right side; blood was found effused beneath the scalp, and on the dura mater; the lungs were congested; the heart, slightly fatty, contained a small clot in its right ventricle. Mr. Hanbury states further that a great number had, since the accident, called at the East Dispensary, suffering from nervous derangement, in conse-

quence of the shock sustained by having been present during the excitement.

By Dr. A. C. Hughes.

Aortic Aneurisms—from a man, thirty-two years, who had died suddenly. Three aneurismal saccules were found in the aortic zone. One of these had given way, and the pericardium was found filled with blood. Atheromatous deposits were seen on the valves and lining membrane of the aorta. A large amount of fat surrounded the base of the heart. The diseased condition had not been discovered during life.

By Mr. H. SAMUELS.

- 1. Malignant Stricture of the Esophagus—from a woman, twenty-seven years old.
- 2. Malignant Disease of the Omentum and small Intestines—from a woman, aged forty-seven. There was a completely impervious stricture of the ileum near the cocum. Immediately behind the stricture in the ileum, an orange pip was found.
- 3. Aortic Disease.—The subject was a man, sixty-five years old, who had had rheumatic fever forty years previously, but who had since enjoyed good health. He died of dropsy, but there was scarcely any bruit audible during life. After death, a considerable amount of thickening and atheromatous deposit were found on the aortic valves.

II.—Cases Related or Exhibited. By. Dr. Wiglesworth.

A Case of Delirium Tremens—successfully treated by hydrate of chloral. In the course of his remarks, Dr. W. alluded to a train of symptoms, first noticed, he believed, by the late Dr. Arnold, of this town, as the result of beer drinking, and found principally among the poorer classes, viz., tingling in the lower limbs, pain, and heat of the legs. Dr. W. considers chloral possesses advantages over all other remedies in delirium tremens; and that, in suitable cases, its use is free from danger.

Two Cases of Retained Pessaries.—One of these, an ordinary

wooden ball-pessary, perforated through its centre, had been in the vagina eight months, and had lost its tape. All ordinary means of removal proving futile, the patient, aged sixty-four years, suggested the employment of a corkscrew. When the aperture in the pessary was found, the corkscrew was introduced into it, and fastened by a few turns of the screw, and, after severe traction, the pessary was removed, still attached to the corkscrew.

By Dr. Nottingham.

Case of Strangulated Hernia.—The patient was thirty-five years old; the hernia was of many years' duration; the tumour about the size of a child's head; the ordinary constitutional symptoms, which indicate the necessity for operative procedure, were almost entirely absent; yet about thirty inches of dark intestine, and an undescended testicle, were discovered outside the internal abdominal ring. No adhesions existed, the bowel was returned easily, the testicle was left in the lower part of the scrotum, and the patient made an excellent recovery.

By Dr. CHARLES HILL.

Cases of Eating Castor Oil Seeds.—A woman, having eaten seven such seeds, suffered from severe vomiting and diarrhoea.—the symptoms resembling those of cholera; but she soon recovered. A child ate six of these seeds, and exhibited no bad effects therefrom.

By Mr. HARRIS.

Case of Spina Bifida—in a healthy, well-nourished child, twelve months old. The mother stated that the tumour, which appeared to emanate from the last cervical and first dorsal vertebra, was about the size of a duck's egg, at birth. Having punctured the swelling at its apex, Mr. H. strapped it spirally, and the tumour gradually diminished to its present size—that of a filbert. There was apparently very little communication now with the spinal canal.

Cases of Calculi in Females.—The first, a woman, thirty years old, was delivered of her seventh child, when a globular mass.

of the size of an orange, was observed to occupy the vagina. Mr. H., having examined her, considered the mass to be a cystic calculus, and that the bladder had been prolapsed during labour. He accordingly replaced the bladder, after removing the placenta, and five or six weeks after the confinement, having incised the uretha upwards and outwards, and dilated forcibly with the finger, Mr. H. was able to grasp the stone with forceps, and removed a lithic acid calculus, of the size of a walnut. Two days after this operation the patient was out of bed and working, and she has since then remained well, and can retain her urine perfectly.

The second case was a young lady, thirteen years of age, who suffered first from a vaginal muco-purulent discharge during May, 1868, which continued until the November following, when she was seized with violent pain in the left side, extending to the lumbar region. Vomiting, and considerable constitutional excitement were present, and swelling was detectable over the painful Angular curvature of the spine, with a distinct projection at the upper part of the lumbar region, was also noticed. stitutional symptoms were treated, and mechanical support applied During May, 1869, the actual cautery was applied to the spine. along the left side of the spinal projection. Two months later micturition became painful, and pus was observed in the urine. In August, 1870, an exploration of the bladder was for the first time allowed, and a calculus detected. It was of oblong form narrow anteriorly, and enlarging towards the fundus of the bladder. The lithotrite was twice used, with an interval of ten days, and all the debris removed. Nocturnal incontinence of urine continued for three or four weeks, but the patient recovered perfectly. All the spinal symptoms have disappeared, and only a slight curvature is now to be observed.

A female, fifty-six years old, presenting numerous fatty tumours on both arms, on the thighs, and on the back—varying in size from a pigeon's egg to a cocoanut—was next exhibited. She was the mother of twelve children; the tumours had been observed for twenty years, but were not painful. The arms, the only exposed parts, presented a curious appearance, as there was scarcely any

portion of the integument which was not involved by the adipose growths.

By Dr. Parsons.

A case of enlargement of the left arm, and of gastric fistula, both produced artificially—by the patient, was communicated by the late Prof. Keith, of Aberdeen, through Dr. Parsons. The patient was a young woman, aged twenty, who for two years was supposed to be suffering from elephantiasis of the left arm. Dr. Keith, finding that the swelling terminated abruptly a little above the middle of the upper arm, and that the skin above this point was perfectly sound, suspected that these appearances were caused by artificial constriction of the limb, and this opinion was verified by detecting the patient in the act of hiding a long list garter under the bedclothes. The patient being watched diligently, and a straight waistcoat applied, the morbid appearance gradually disappeared, leaving merely a loose state of the skin of the arm.

Some time afterward the same patient complained of cardiac palpitation, and a tape seton was inserted somewhat low down on the left side. By constant tampering, she managed to thrust an old rusty penny into one of the openings, and beneath the skin. The pressure of this foreign body excited inflammatory action and ulceration, until at length the stomach was opened into, and some of its contents escaped externally. The patient has now been living seventeen years with this gastric fistula. It is kept closed, for the nutrition of the body, by means of a gutta-percha plug, which is covered with oiled silk before it is introduced. The finger can be easily passed through the orifice, as far as either the cardiac or the pyloric orifice. In the former position it gives rise to painful sensations about the heart, while in the latter it can be borne without much uneasiness. The opening appears to correspond with nearly the centre of the anterior wall of the stomach. She suffers a good deal from gastralgia, for which she takes an ounce of solution of morphia (four grains) daily, but seems to enjoy tolerably good health. The mucous lining of the stomach appears intensely red, the fæcal evacuations are natural. Food is taken in the natural way.

By Mr. HALL.

Venesection in Uræmic Convulsions.—Two cases were narrated, illustrative of the beneficial effects of free bleeding in the convulsions attending uræmic poisoning after scarlatina. In the first case—that of a boy ten years old—leeches were first applied to the temples without affording relief. Ten ounces of blood were next abstracted by venesection, and fifteen minutes later three ounces more were removed. In an hour consciousness was restored, and the patient recovered. In a second case—that of a lady twenty-two years old—the temporal artery was opened with the best result, and a good recovery followed. In each of these instances the urine was scanty in quantity and albuminous, and general anasarca was present.

III.—PAPERS READ.

- On Scarlet Fever, by Dr. Wiglesworth. The author commenced by remarking that the origin of scarlet fever has been ascertained to be a germ, and he believed that the breath of infected persons was the most general mode of propagating the disease. There were, however, different degrees of intensity of the poison; some patients succumbing to its violence within twentyfour hours, others lingering for five or six days, and others again dying from the sequelæ which often followed the disease. The throat and kidneys were favourable depôts for the reception of the poison. As regards treatment, the author stated that, till the nature of the germ was discovered, we could not find a specific. His treatment consisted in moderating the fever, and supporting the patient's strength. Chlorate of potash, he believed, did good in some instances. A high pulse in the early stage was a bad sign. Several cases were related by the author in support of his views.
- 2. On Gratuitous Medical Advice, by Mr. Harris. The author deprecated the system, as injurious to the profession, and as tending to pauperise the people. As this subject is now being handled by the profession in London, and as no doubt the members of the Society had read the account of a meeting recently held in the rooms of the Medical and Chirurgical Society, under the presi-

dency of Sir. Wm. Ferguson, he would not repeat the statements made and arguments used on that occasion.

3. On Cholera—its pathology, prevention, and treatment—by Dr. Parsons.

The Pathology, Dr. P. stated to be a paralysed condition of the sympathetic nervous system, caused by the introduction of a specific organic matter into some portion of the gastro-intestinal mucous membrane. For arresting the progress of the disease through the various members of a household, the author suggested liberal diet, a fair amount of rest, thorough and efficient ventilation, the maintenance of a high temperature (between 80° and 90° F.), the removal of all woollen fabrics, suspending throughout the rooms sheets soaked in a solution of carbolic acid, the immediate disinfection and removal of motions, vomited matters, and urine, and forbidding the use of drinking-water which has not been previously either boiled or filtered. Dr. P. also considered the internal administration of carbolic acid most effectual in arresting the propagation of the disease.

In considering the Treatment of Cholera, the author adopted Macnamara's classification of the stages of the disease. He advocated the astringent treatment in the first stage, and suggested the advisability of combining carbolic acid with the opiates. second stage, he recommended large doses of capsicum (30 grs.) as an excellent stimulant to the sympathetic, through the mucous. capillaries; he also advised drinks acidulated with sulphuric acid in order to neutralise the alkaline character of the rice-water fluid. and occasional doses of carbolic acid,—also friction, or chloroform, to relieve the cramps. Turpentine stupes, and sinapisms, he said, did no good, as they could not reach or affect the seat of the disease. He considered that stimulants did no good, and often did harm in this stage, while opiates were worthless. In the third and fourth stages, Dr. P. urges the capsicum treatment, and when the medicine cannot be taken by the mouth, it should be given by the rectum. In the stage of collapse, advantage is likely to be derived from immersion in a saline bath, or from enveloping the patient in sheets soaked in solutions of nitrate or chlorate of potash as likely to cause absorption through the cutaneous capillaries, and to supply

the loss sustained by the deoxygenation and dehydration of the vessels. The treatment of the fifth stage, or that of reaction, should be very guarded. Stimulants should not be urged for at least four or five days, bland nutritious diet should be selected; and if suppression of urine should occur, the author advised cupping over the loins, together with small and repeated doses of tinct. lyttae—10 drops every hour. The various sequelæ must be treated on general principles.

Dr. Parsons urged the use of Aitken's self-registering thermometer in all stages of cholera, as the best aid in diagnosing the various phases of the disease, and as the surest guide to prognosis. In the first stage the temperature remains normal, about 98° in the axilla, and from 97° to 98° on the tongue; in the second stage, the temperature of the axilla falls to from 95° to 97°, tongue 87° to 89°; in the third stage, the axillary temperature falls to 93° to 95°, sometimes even to 90°, while the tongue falls to from 85° to 87°, sometimes even to 82°. In all cases that he had examined, there was a difference of 8° between the temperature of the tongue and that of the axilla. He had seen only one case recover in which the axillary temperature was as low as 93°, and that of the tongue 85°; and he had never seen a fatal case in which the temperature of the axilla was 96° or upwards. In the fourth stage there is a sudden rise of temperature to 98°, when death speedily follows. In the fifth stage there is a gradual rise to the normal standard.

4. On Abortion, by Dr. O'Connor. The date, said the author, is limited by some to the first five months of uterogestation; by others to the viable period of the fœtus; while Murphy restricts it to within the fourth month of uterogestation, applying the term "miscarriage" to misses occurring between this and the viable period, and "premature labour" to the too early expulsion of the viable child. This last definition was adopted by the author, who ascribed the liability to abort at this period to the slight connexions then existing between the uterus and its contents. Moreover, the nutrient and receptive processes occurring in the uterus, and the formative in the ovum, involve organic and functional change during the earlier months, as contrasted with simple increase during the later; and, thus producing more immediate and remote derange-

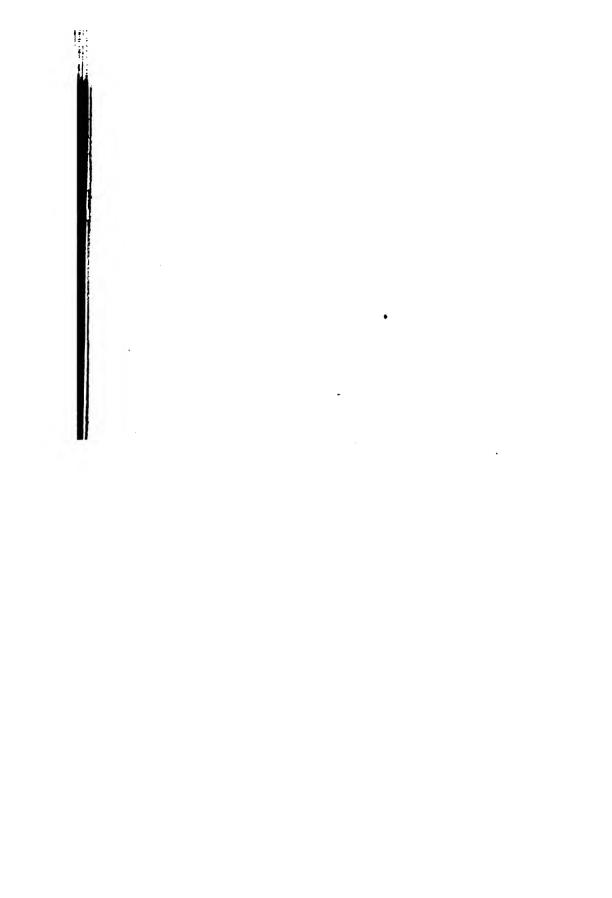
ments, afford conditions favourable to separation and expulsion. The liability to abort appears to obey some law of periodicity connected with the menstrual function, so that the uterine hypercemia at the menstrual periods being transmitted to the ovum may be supposed to tend to the rupture of the delicate connecting medium. The author has, moreover, observed the final cessation of the menses, preceded almost immediately by one or sometimes two abortions; and in other instances, where menstruation has been normally very copious or frequent, the critical period (which generally occurs early) has been ushered in by a few menstruations preceded and accompanied by some peculiar sensations resembling those which existed before and during the first change.

The predisposing causes treated of were, procidentia uteri, leucorrhea, zymotic diseases, diseases of the chorion and amnion (especially inflammatory thickening of these membranes), intramural uterine tumours, and syphilis.

In the next place, can abortion be prevented? Active interference is dangerous when there is homorrhage, contractile pain and bearing down efforts, nay more, the discharge of liquor amnii simulated in the earlier as it very frequently is in the advanced months by abundant secretion from the glandulæ nabothi, or even a patulous os, without suspension of gestation; but two conditions always end in abortion, viz., cessation of gestation from any cause, and death of the ovum from any cause. The direct result of the first is regular and general contraction of the uterus; in contradistinction to irregular, partial, and sympathetic contraction. The death of the fœtus, Dr. O'Connor believes to be indicated best by "transient feverish attacks alternating with syncope during the day, and irregular and disturbed sleep at night."

Regarding remedial measures in abortion, the author enumerated opium combined with some mineral acid when the state of the ovum is doubtful, but "if the uterus is inert while a portion of the ovum is separated, thereby continuing the hæmorrhage, nothing can supply the place of ergot." If the hæmorrhage is considerable and protracted, the author recommends plugging with fine sponge soaked in vinegar and water; and, in these instances,

the exhibition of ergot is mischievous, but opium, in moderate doses, should be given repeatedly. Remove the plug in twelve hours, but if the ovum is not easily brought away, now replace the plug and give a dose of ergot. Should these means fail, and the fingers be not sufficient to remove the uterine contents (though this is rarely the case), the author recommends the long flatbladed forceps and the finger for extracting the ovum; but he considers the wire crotchet and other instruments are more liable to tear through than to extract.





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